

# Evaluation of AI Knowledge, Attitudes and Practices in Indonesia 2008-2009

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# Objectives

- Describe USAID program progress 2008-2009 through comparisons between 2008 KAP and 2009 KAP
- Evaluate impact of TV campaign January-April 2009
- Assess progress and impact of community mobilization program
- Assess impact of other communication activities



# Did the program work?

1. Progress toward USAID goals of avian flu control?
2. Contribution of CBAIC program toward changing intended behaviors?



# Data sources

1. KAP Survey 2008 (April-May 2008)
2. KAP Survey 2009 (August-September 2009)
  - Sample of 4247 respondents
  - Focus on West Java, Banten, DKI Jakarta, Central Java
  - Intensive, non-intensive, buffer, household & workplace
3. Qualitative investigation by AC Nielsen

# Comparisons

<b>2008 KAP</b> Sumut, Jabar, Banten, Jatim, Bali	<b>2009 KAP Survey</b> Jabar, Banten, Jateng, DKI Jakarta
<ul style="list-style-type: none"> <li>• AI awareness</li> <li>• Knowledge of transmission</li> <li>• Knowledge of protective practices</li>   <li>• Attitudes toward protective behaviors</li>   <li>• Protective behaviors</li> <li>• Sources of information</li> </ul>	<ul style="list-style-type: none"> <li>• AI awareness</li> <li>• Knowledge of transmission</li> <li>• Knowledge of protective practices</li> <li>• Attitudes toward AI threat</li> <li>• Attitudes toward protective behaviors</li> <li>• Self &amp; collective efficacy</li> <li>• Protective behaviors</li> <li>• Sources of information</li> <li>• Specific message recall</li> </ul>



# Comparisons

## USAID program progress

KAP 2008  
West Java  
Banten  
N=778<sup>1</sup>



KAP 2009  
West Java  
Banten  
N=1919<sup>2</sup>

## CBAIC program impact

KAP 2009  
West Java  
Intensive  
N=1000



KAP 2009  
West Java  
Non-intensive  
N=511

KAP 2009  
West Java  
Intensive & Non-intensive  
N=1511



KAP 2009  
Central Java  
N=520



<sup>1</sup> Includes Kab. Tangerang, Kota Tangerang, Sukabumi, Cirebon

<sup>2</sup> Include Jawa Barat, Banten

## 2009 KAP Survey at a glance

Household Panel	Workplace Panel	Total
2,843	1,404	4,247

By Panel	Household Panel		Workplace Panel			Total
	Households/ Consumers	Backyard Producers	Traders/ Transporters	Poultry Slaughters	Live Bird Market Vendors	
Survey 1: Non intensive	923	919	277	257	266	2,642
Survey 2: Intensive	500	501	174	178	177	1,530
Survey 3: Buffer Zone	-	-	23	28	24	75
<b>Total</b>	<b>1,423</b>	<b>1,420</b>	<b>474</b>	<b>463</b>	<b>467</b>	<b>4,247</b>

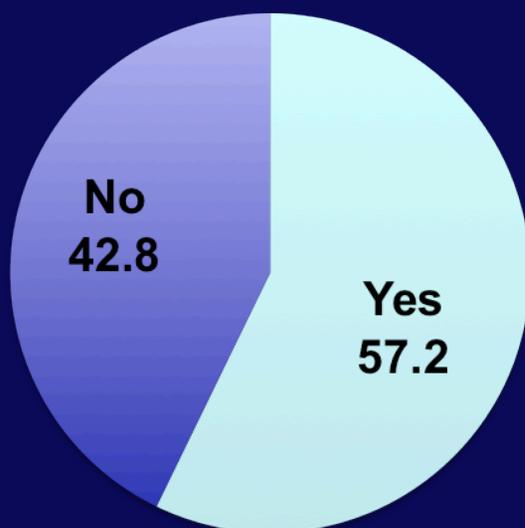
By Area		Jawa Barat	Jakarta	Banten	Jawa Tengah	Total
Household Panel	Survey 1: Non intensive	511	403	408	520	1,842
	Survey 2: Intensive	1,001	-	-	-	1,001
Workplace Panel	Survey 1: Non intensive	335	95	96	274	800
	Survey 2: Intensive	529	-	-	-	529
	Survey 3: Buffer Zone	75	-	-	-	75
<b>Total</b>		<b>2,451</b>	<b>498</b>	<b>504</b>	<b>794</b>	<b>4,247</b>



# Overall progress toward USAID goals



## Have or own poultry— Backyard production is down



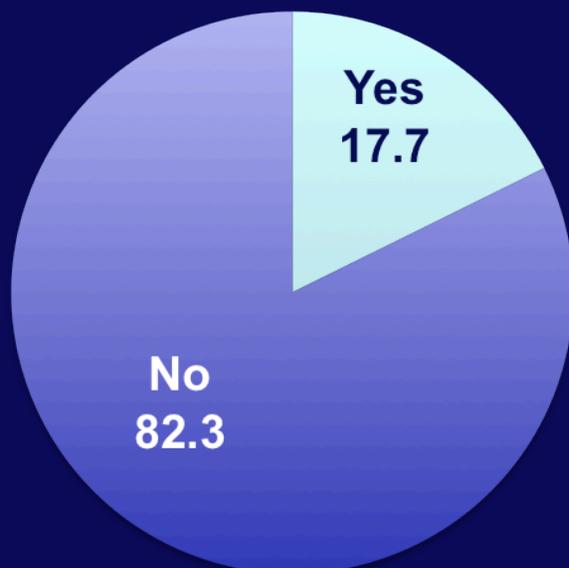
KAP 2008



KAP 2009



## Had dead poultry in last 1 month— Acknowledged loss of poultry is down



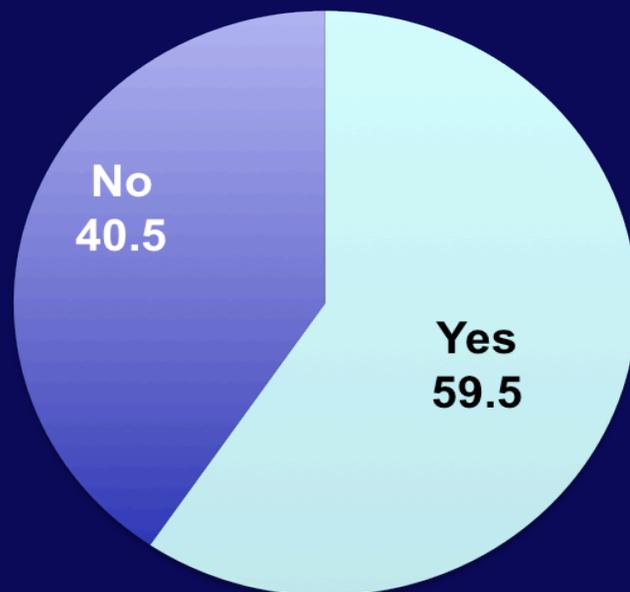
KAP 2008



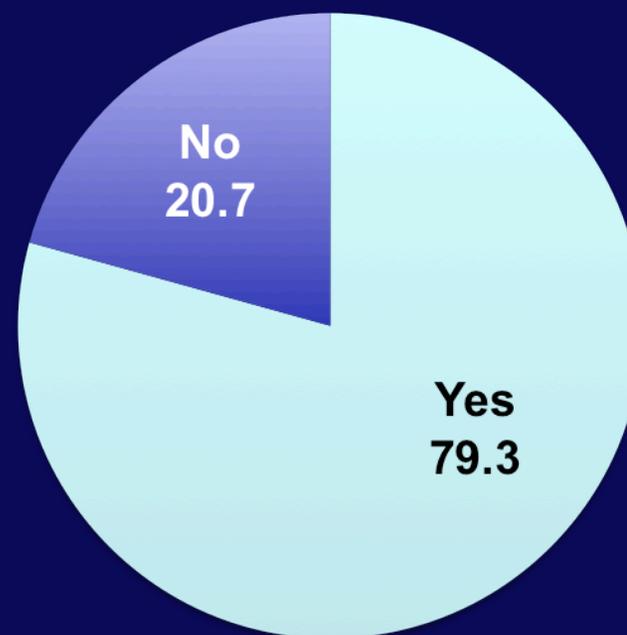
KAP 2009



## Spontaneous awareness of avian flu (by name)— Top of mind awareness of AI is up



KAP 2008



KAP 2009



## Knowledge of symptoms of avian flu in birds— Up strongly

	KAP 2008	KAP 2009
Sudden death	38.6	57.9
Weakness	0.1	33.7
Discharge from nose	1.0	17.6
Fever	5.8	15.3
Crest, wattles turn blue	4.4	19.5
% knowing 2+ symptoms	2.9	44.8

## Awareness of actions to protect poultry (backyard producers)— Relatively flat, but vaccination knowledge up strongly

	KAP 2008	KAP 2009
Control access to plot	4.0	1.2
Separate species	6.0	5.9
Separate new stock (in 2009 for 2 wks)	5.4	5.9
Cage chickens	9.6	9.9
Clean cages	7.2	37.5
Vaccinate chickens	11.1	53.3



## Knowledge of symptoms of avian flu in humans Up strongly

	KAP 2008	KAP 2009
Fever	24.9	66.9
Fever 38C	--	23.8
Cough	7.6	22.7
Difficulty breathing	9.6	19.9
% knowing at least 1 symptom	29.4	53.3

## Knowledge of human transmission Mostly up strongly

	KAP 2008	KAP 2009
% know humans can get AI	38.2	89.8
Contact with sick/dead poultry	27.9	47.1
Contact with feces/waste from infected poultry	22.9	17.9
Eating undercooked poultry or eggs	2.4	10.6
Eating sick or dead birds	3.3	11.8
% knowing 2+ transmission modes	28.0	43.9



## Knowledge of actions to prevent human AI infection

### Handwashing with soap accounts for most of increase

	KAP 2008	KAP 2009
Wash hands with soap after handling poultry*	2.1	41.2
Don't permit children to be in contact with chickens or eggs*	21.6	7.6
Don't consume poultry that is sick or died*	19.9	11.3
Don't consume raw or undercooked meat or eggs	22.0	20.1
% who know at least 1 preventive action	33.4	59.8

## Sources of AI Information

Almost all types of communication, outreach, and service delivery are reaching more people

	KAP 2008	KAP 2009
TV	39.2	76.9
Radio	3.4	9.5
Print/flyers/brochures	4.8	3.8
Community events & activities	5.5	24.2
Health/agricultural services	1.9	15.4
Local authorities	1.4	4.3
% citing 2+ sources	23.2	41.4
Mean number of sources recalled	0.7	1.6

# Qualitative impressions

Hygiene and cleanliness issues have appeal on religious and aesthetic grounds

- Handwashing already fairly common if not always timely
- Concerns about the quality & cleanliness of markets (dirt, flies, blood)
- Consumer complaints about sanitation in markets
- Desire for cleaner markets

Relatively little home slaughtering

- Slaughtering for home consumption done for religious reasons (halal)
- But consumers also cite careless practices in market



# Summary of overall progress

Strong gains in most areas of knowledge

- Avian and human symptoms
- Modes of transmission
- Protective actions, especially cage cleaning and vaccination

Declines awareness of children's protection and consuming sick poultry

- Shifts in message emphasis over time

Program reach has improved dramatically

- Strong evidence of integrated programming
- Reflected in somewhat lower acknowledged poultry death
- Decline in backyard poultry ownership



# 2009 Program Evaluation



# Key behaviors promoted

## Preventive practices

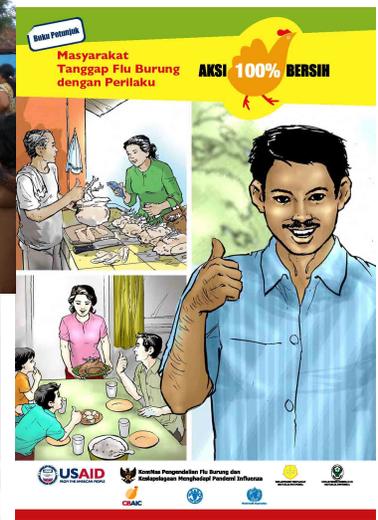
- How to stop AI virus transmission through clean equipment, self and environment - in poultry chain context, Aksi Bersih





# Communication Activities

- Two TV spots  
(3 versions @ 30s, 15s , 5s)
- Radio Program Series:
  - Talk shows
  - Off-air events
  - Radio spot
- Support for Team Flu Burung, PMI, and MUH
  - Supporting print materials & outdoor materials
  - Community Events (8 events)



## Containment and response practices

– What to do during outbreak (placed in mass media during rainy seasons)

1. REPORT to head of village (Pak RT/ RW/ Kepala desa) for getting further action/ suggestion, plus secondary messages:

- Use simple personal protection
- Go to puskesmas if having fever 38 degrees or over, after having contact with poultry

2. BURY the carcass in deep enough hole appropriately knee-deep (cover soil, and pour lime stone to ensure the virus will die), plus secondary messages:

- Wash with soap the used equipments and hands, take shower and change clothes after burying.
- Do not throw carcass in the gutter/river



# Communication Timeline



Television

TVC 30"/15"/5" – Loose Spots & Sponsor Programs  
 (Total TARPs of 3,579; Reach 1+ of 97.7% & Reach 3+ of 92.2%; Total OTS = 36.6)

May June

Radio, print, outdoor, events

Live Report, Tips/Ad libs 30" & Talk shows 30 – 60 minutes

# Exposure to CBAIC activities

## Included:

- Recognition of 2 TV ads and banner
- Recall of radio ads & programs
- Exposure to printed CBAIC materials
- Exposure to CBAIC talks & events in community



## Sources of AI Information (percent)

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
TV	79	76	77	77
Radio	12	10	11	16
Print/flyers/brochures	5	2	4	1
<b>Community events &amp; activities</b>	<b>22</b>	<b>11</b>	<b>19</b>	<b>13</b>
<b>Dinas Kesehatan</b>	<b>9</b>	<b>1</b>	<b>6</b>	<b>&lt;1</b>
Veterinarian	3	1	3	<1
<b>Dinas Peternakan</b>	<b>13</b>	<b>3</b>	<b>10</b>	<b>1</b>
Local officials	5	1	4	1
Muhammadiyah	8	6	8	6
PMI	5	1	3	1
Team Flu Burung	4	1	3	<1
RT/RW	3	1	2	1
Mean number of sources recalled	<b>2.0</b>	<b>1.3</b>	<b>1.7</b>	<b>1.3</b>

## Non-CBAIC



Cell phone



UNICEF



JICA

## CBAIC



Kentongan



Bury



Report

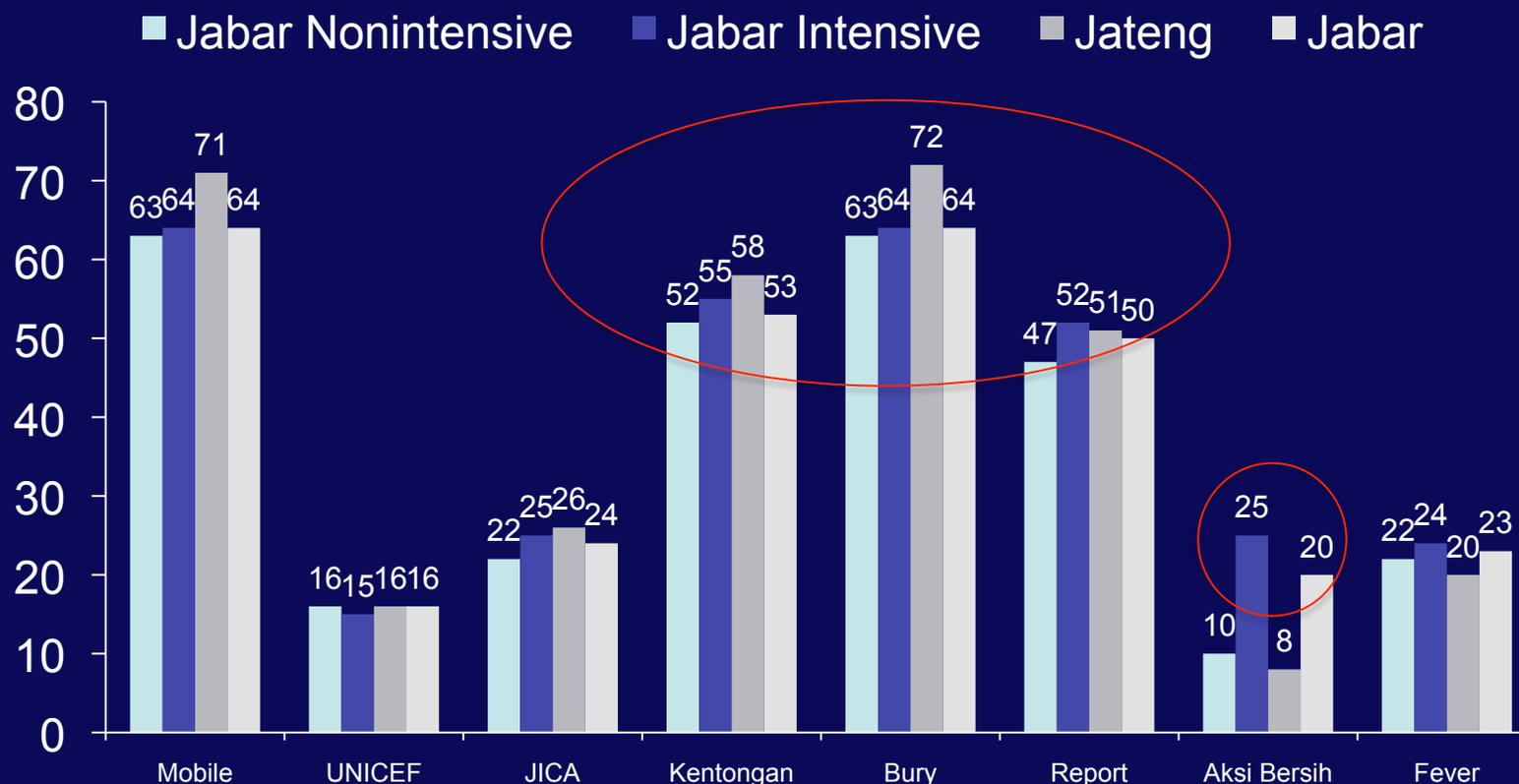


Aksi Bersih



Fever

# Recall of TV spots by area



## Who contacted you in the community about Aksi 100% Bersih by area?

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
<b>Team Flu Burung</b>	<b>14</b>	<b>4</b>	<b>11</b>	<b>0</b>
Posyandu staff	4	2	11	0
PKK	2	1	2	4
Puskesmas staff	5	3	4	1
Dinas Kesehatan	8	4	7	2
Veterinarian	2	0	1	0
Dinas Peternakan	4	4	4	1
Muhammadiyah	4	0	3	0
PMI	1	0	1	0
<b>RT/RW</b>	<b>12</b>	<b>4</b>	<b>9</b>	<b>5</b>
<b>VAIC</b>	<b>10</b>	<b>2</b>	<b>7</b>	<b>0</b>



## Community-based activities on the 8 behavior packages through December 2009

District	# selected (practice x village)	% adopted	Most chosen	Least chosen	< 50% adopted
<b>Bandung Barat</b>	387	64	Backyard Sector 3	Live vendors Slaughterers	Live vendors Market managers
<b>Bandung</b>	424	76	Backyard Consumers Sector 3	Market managers Live vendors	Live vendors Market managers
<b>Tasikmalaya</b>	861	44	Backyard Live vendors	Consumers Trader/Transporter	Duck producers Market managers
<b>Ciamis</b>	676	41	Backyard Sector 3 Consumers	Market managers Live vendors	Live vendors Duck producers
<b>Garut</b>	699	35	Backyard Duck producers Sector 3	Market managers Live vendors	Backyard Duck producers

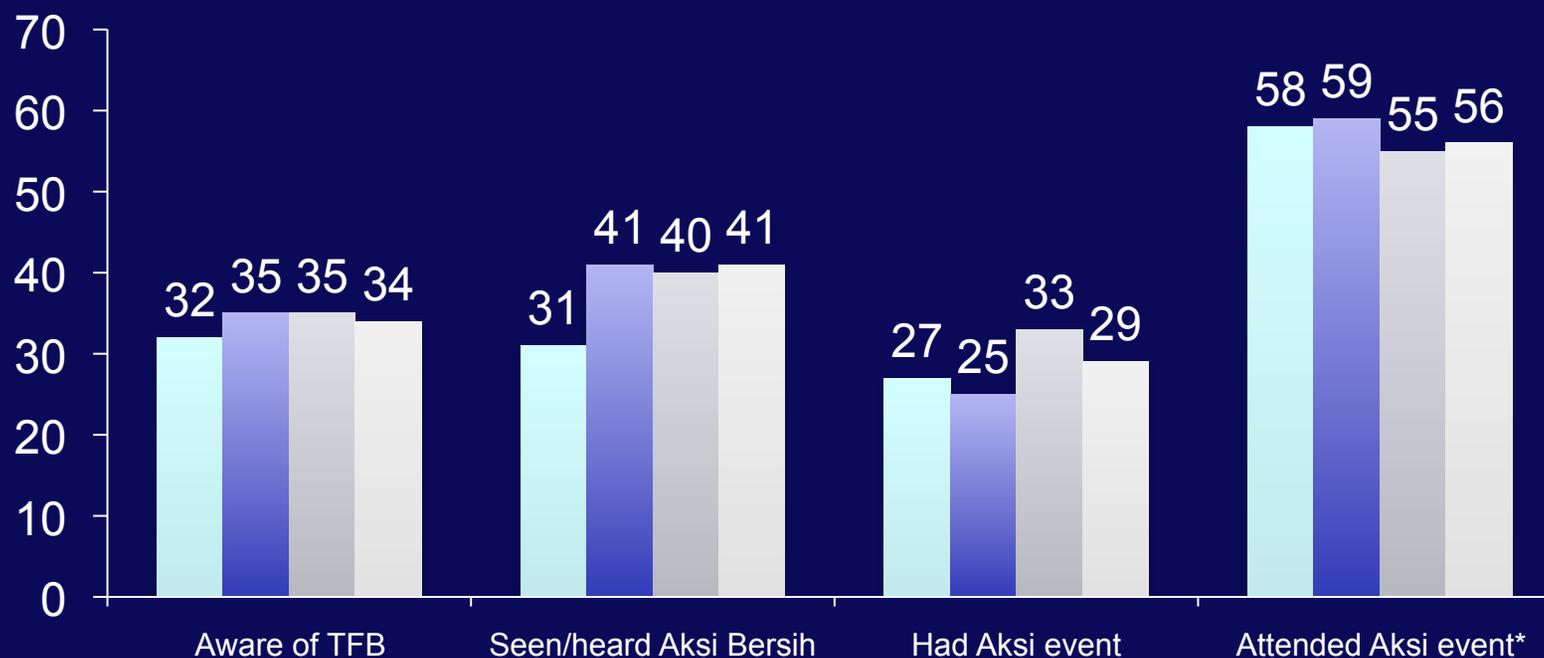


## Exposure to specific message topics in the media by area

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
Flu burung	89	84	87	84
Aksi 100% Bersih	32	13	26	11
Burn	65	58	66	44
Bury	77	69	74	66
Bury knee deep	13	8	11	3
Report	41	28	37	23
Fever	7	5	6	5
Wash hands with soap after handling poultry	36	26	32	24

## Contact with Team Flu Burung— Backyard producers and commercial chain in Intensive Area

- Backyard producers
- Traders/transporters
- Slaughterers
- Live bird vendors



## **KAP differences between commercial chain and backyard producers**

### **Wash cages regularly**

- Traders/transporters, slaughterers & live bird vendors more likely to know this is important especially in Intensive Project areas

### **Hand washing with soap after handling poultry**

- Traders/transporters, slaughterers & live bird vendors more likely to know this personal protective behavior

### **Belief that AI can be fatal**

- Slaughterers and live bird vendors more likely to believe, especially in Intensive Area

## Differences between commercial chain and backyard producers

### Reach of Flu Burung messages

- Roughly same levels of recall on burn, bury, report, handwashing, cleaning cages and thorough cooking

### Reach of Aksi Bersih radio

- Traders/transporters and slaughterers more likely to recall these messages, especially slaughterers in Intensive Areas

### Awareness of Team Flu Burung

- Similar awareness of TFB among commercial chain and backyard producers, especially in Intensive Areas

# Correlation

Are KAP indicators related to program activities?

- Differences by program area
- Differences by exposure to specific materials or activities



## Average number of correct knowledge items by geographic area

	West Java Intensive	West Java Non-intensive	West Java Total	Central Java
AI bird symptoms (7 items)	<b>1.9</b>	<b>1.5*</b>	<b>1.7</b>	<b>1.5*</b>
AI bird protection (7 items)	<b>1.5</b>	<b>1.3*</b>	<b>1.4</b>	<b>1.3*</b>
AI human symptoms (4 items)	<b>1.4</b>	<b>1.2*</b>	1.3	1.3
AI human transmission (6 items)	<b>1.5</b>	<b>1.2</b>	1.4	1.4
AI human protection (8 items)	<b>2.1</b>	<b>1.8</b>	<b>2.0</b>	<b>1.7</b>
Differences between AI & tetelo (6 items)	<b>1.1</b>	<b>0.9</b>	<b>1.0</b>	<b>0.2</b>

## Differences in self-reported behavior change by area (backyard producers)

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
Separate new stock for two weeks	5	5	<b>5</b>	<b>2*</b>
Don't sell birds that are sick	4	2	2	3
Bury dead birds	15	13	14	13
Report dead birds	<b>16</b>	<b>9*</b>	<b>14</b>	<b>7*</b>
Wash hands with soap after touching poultry	<b>30</b>	<b>23*</b>	28	25
Wash hands with soap after preparing poultry	<b>18</b>	<b>10*</b>	15	13
Wash utensils with soap after preparing poultry	<b>15</b>	<b>10*</b>	13	11
Don't consume poultry that died	13	13	13	10

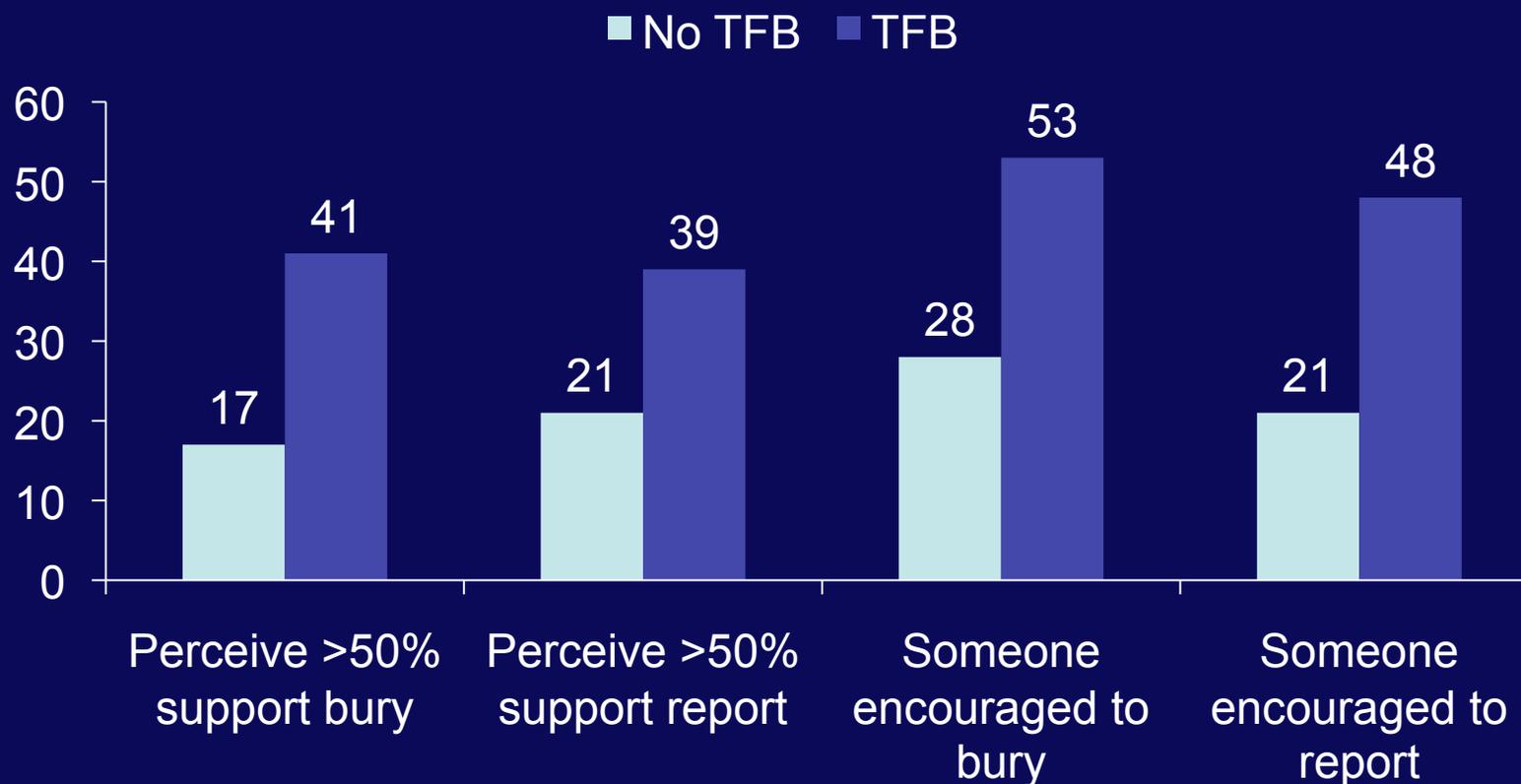
## Differences in self-reported behavior change by area (consumers)

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
Don't consume birds that are sick	15	10*	13	7*
Report dead birds	19	9*	16	5*
Wash hands with soap after touching poultry	33	23*	30	23*
Wash hands with soap after preparing poultry	8	4*	8	6
Wash utensils with soap after preparing poultry	8	6	7	5
Don't consume poultry that died	8	7	8	8

## Perceptual factors by area

	W. Java Intensive	W. Java Non-intensive	W. Java Total	Central Java
<b>THREAT</b>				
Possible to die from AI	<b>89</b>	<b>85</b>	87	86
Very likely that someone who gets AI will die	<b>15.3</b>	<b>10.3</b>	<b>13.6</b>	<b>7.4</b>
<b>SUSCEPTIBILITY</b>				
Likely or very likely someone from your family will get AI	27.4	30.1	<b>28.3</b>	<b>39.0</b>
Possible for people in this community to die from AI	17	16	<b>17</b>	<b>24</b>
<b>SOCIAL NORMS</b>				
Believe that >50% in the community support reporting of dead chickens	<b>33.6</b>	<b>24.0</b>	<b>30.3</b>	<b>11.9</b>
Believe that >50% in the community support burying dead poultry	<b>33.9</b>	<b>27.9</b>	<b>31.8</b>	<b>21.7</b>

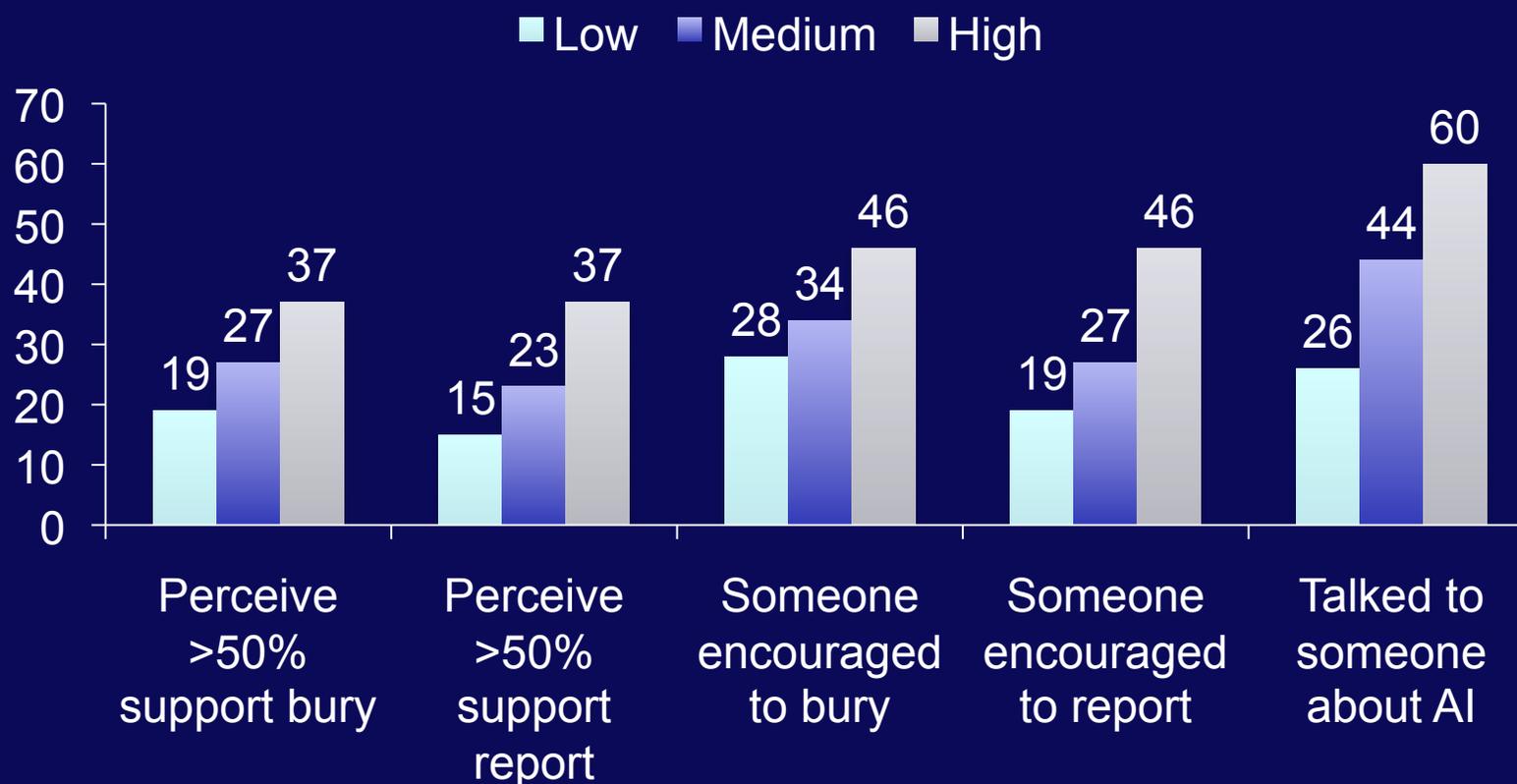
## Presence of Team Flu Burung in community increases perceived social influence



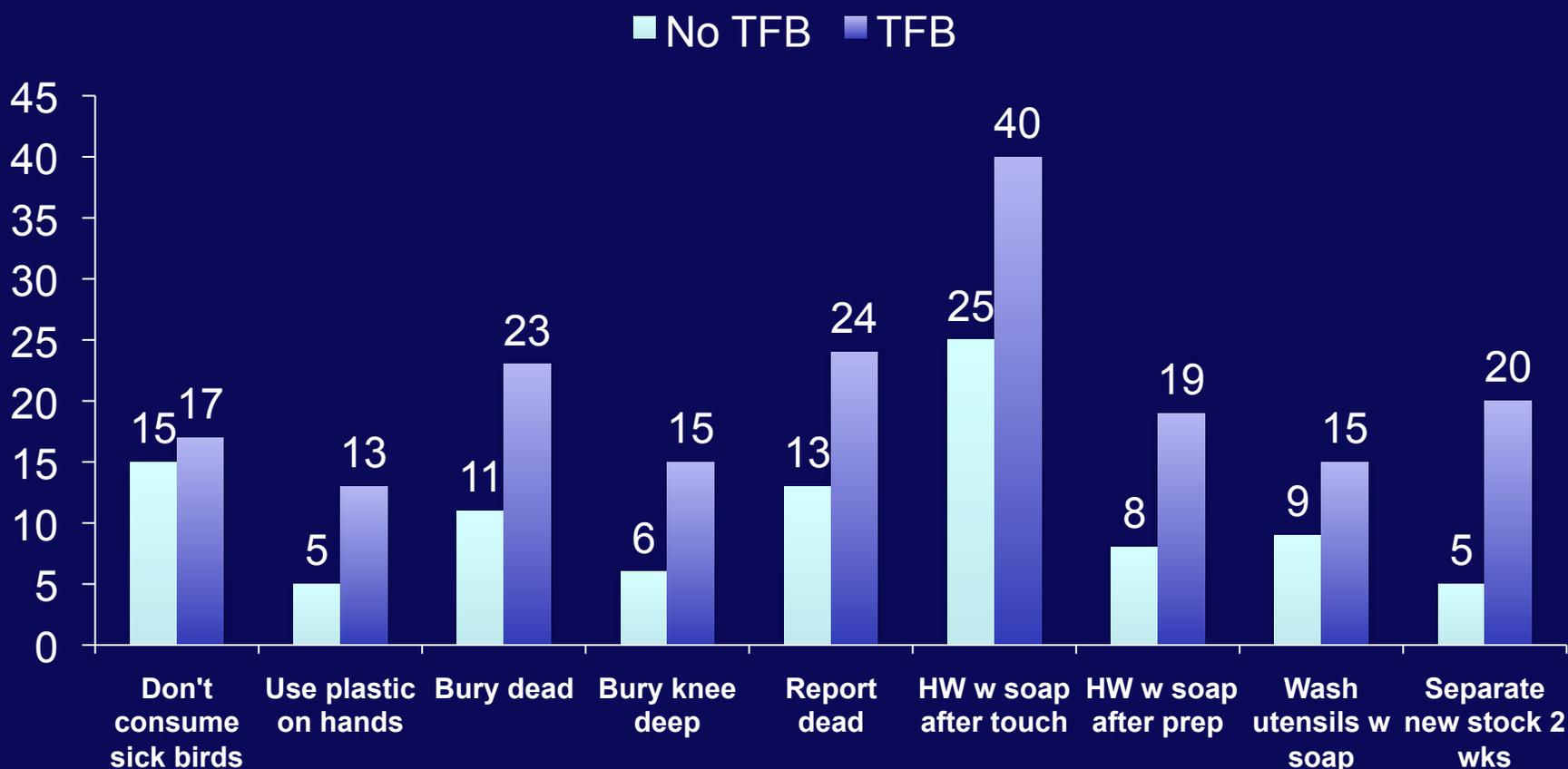
# Dose response

Do outcomes increase with level of program activities?

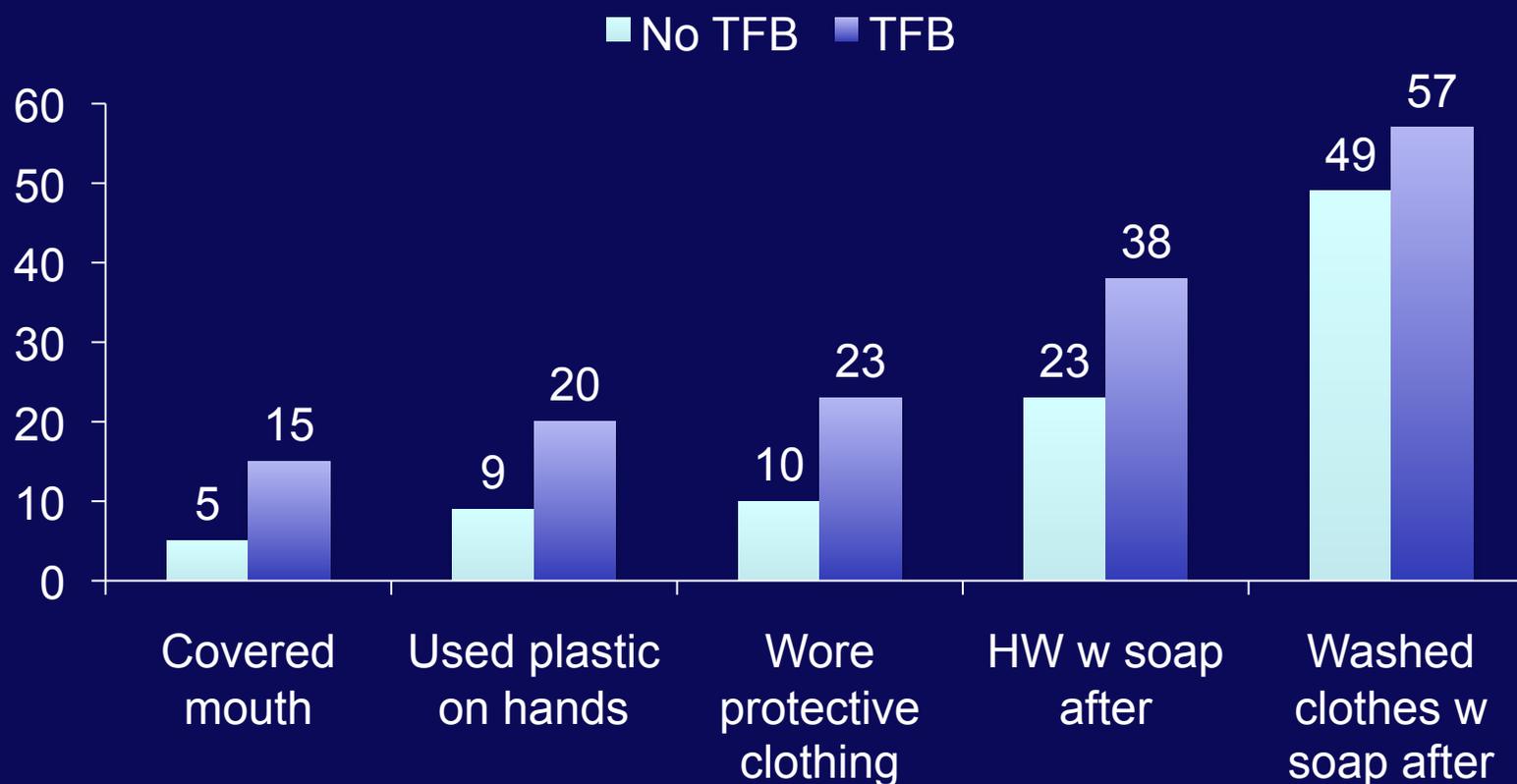
# Exposure to CBAIC TV spots increases level of perceived social influence and interaction



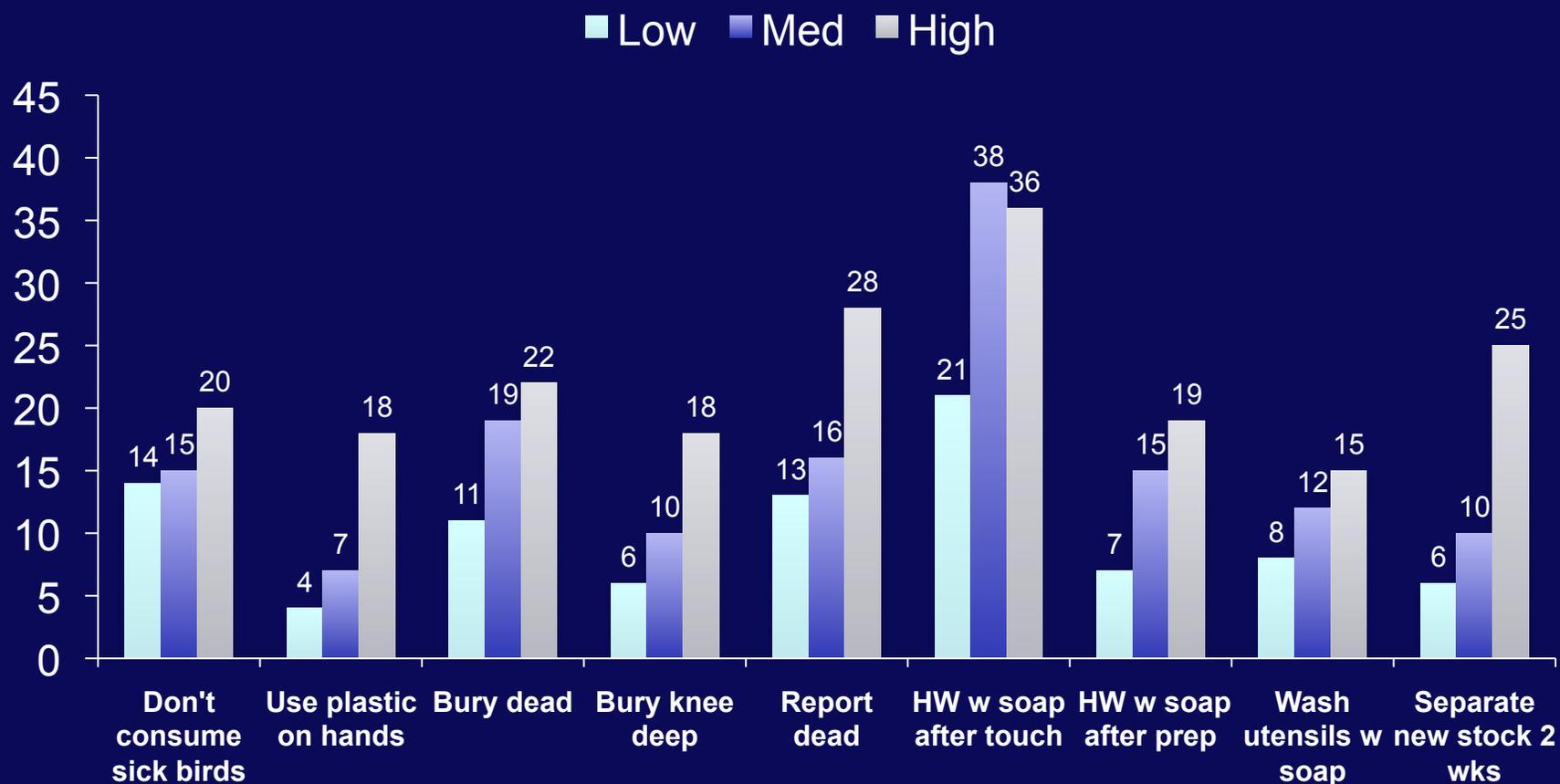
## Impact of Flu Burung Team on reported behavior change (Intensive Area)



## Percent reporting protective behaviors last time they dealt with dead poultry by presence of TFB team in community



## Effect of level of exposure to CBAIC TV spots on reported behavior change (Intensive Area)

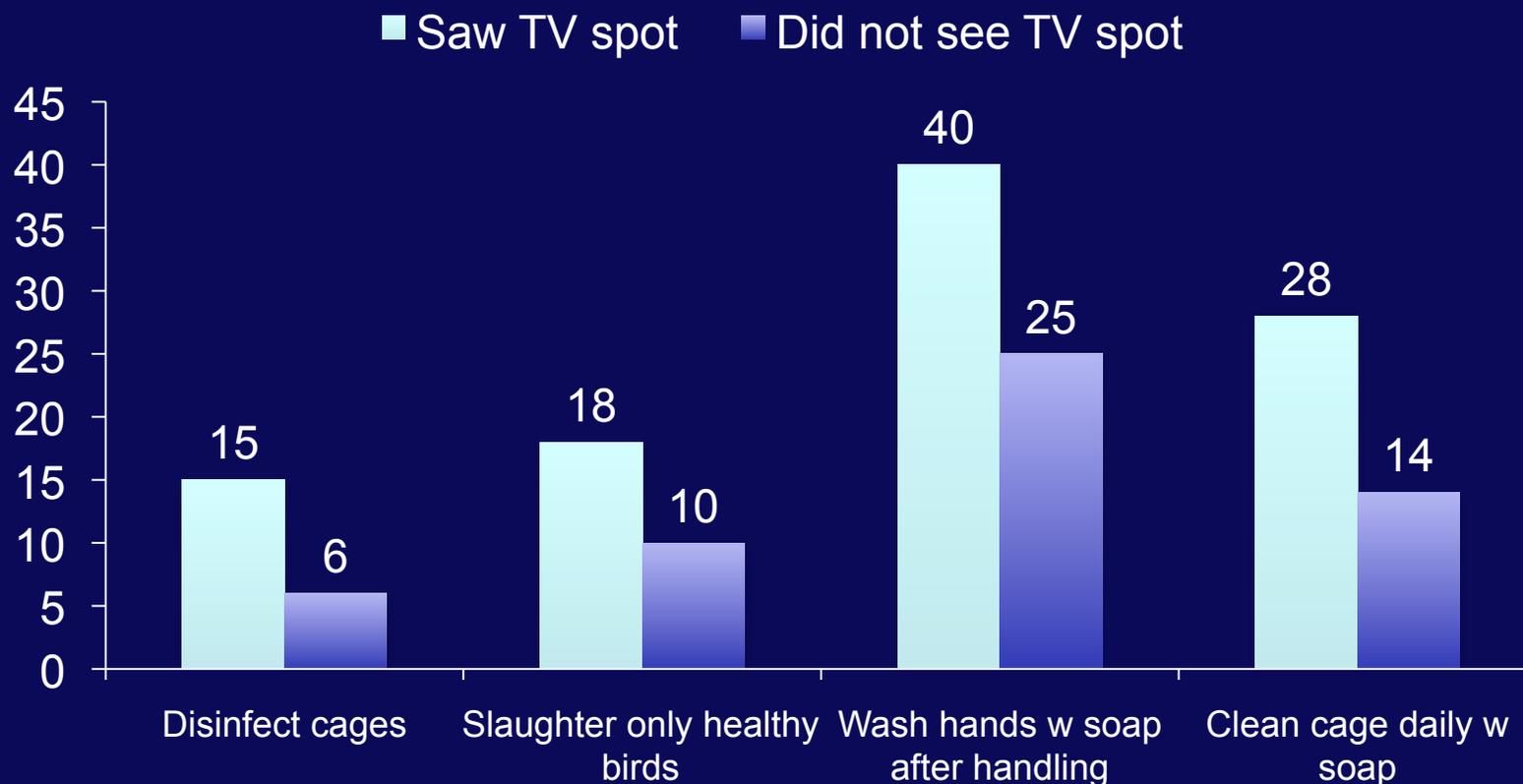


# In the workplace:

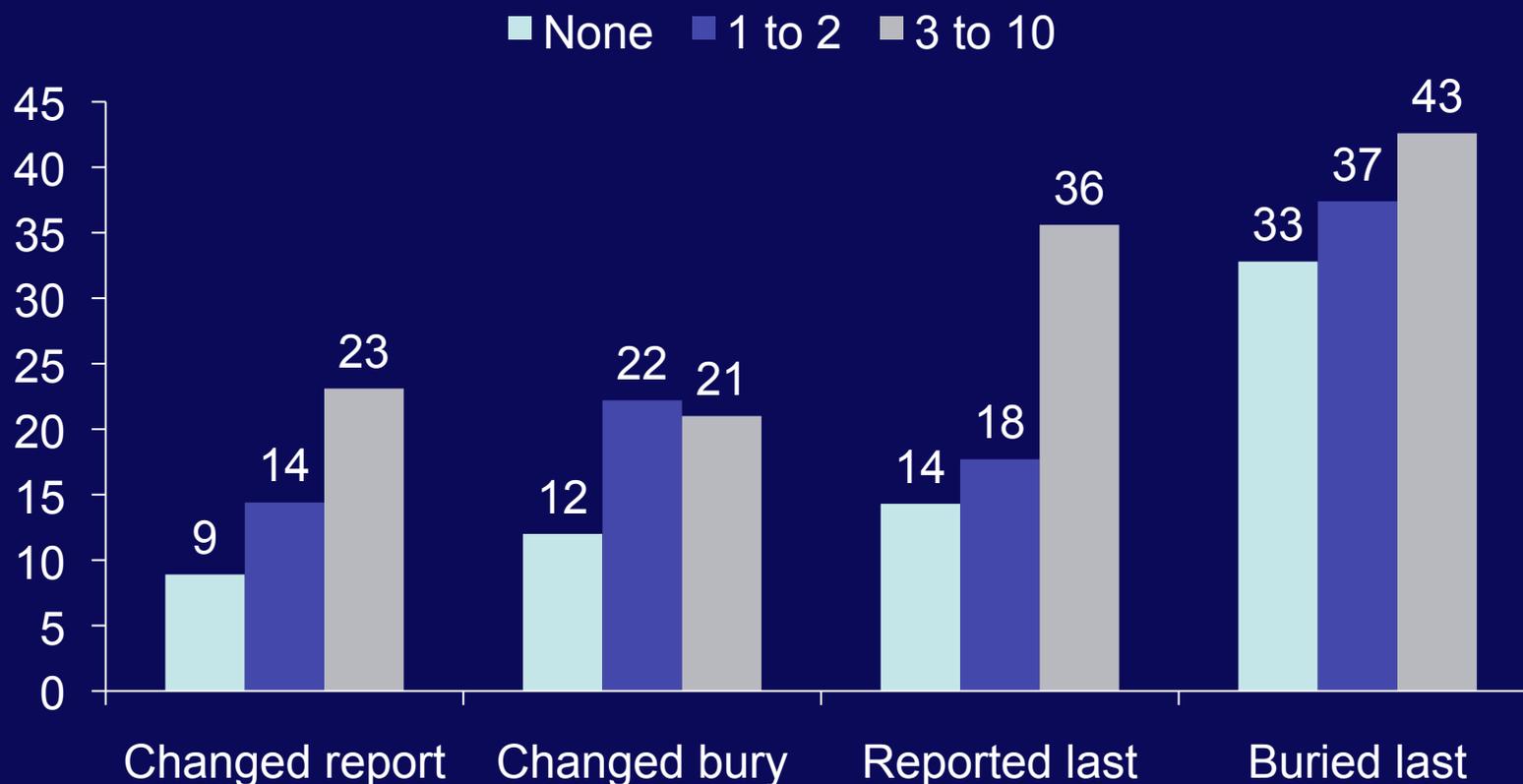
## Impact of Aksi event on self-reported change in behavior among traders/transporters, slaughterers, live vendors



## In the workplace: Impact of Aksi TV spot on self-reported change in behavior among traders/transporters, slaughterers, live vendors



## Percent of backyard producers who buried or reported or said they changed behavior by level of exposure to Aksi Bersih materials



# Independent effect of program on outcomes

Does the effect remain after potential  
confounders are accounted for?



## Factors affecting number of reported behaviors changed (n=14)

Variable	Model 1	Model 2	Model 3
Age	0.99	0.99	1.00
Gender	1.05	1.07	1.12
Education level	1.10	1.03	1.02
Wage earner	0.99	1.03	1.02
HH water supply ever scarce	1.25	1.33	1.02
N of bird protective behaviors known		1.21	1.34
N of human protective behaviors known		1.40	1.19
Talked to someone about AI		1.30	1.20
Positive attitude scale score		1.26	1.31
Exposure to any CBAIC TV spots			1.65
Saw any Aksi Bersih materials			1.13
Had a community event (TFB)			1.74
Attended a community event			1.33

# Backyard Owners

- For the backyard producer, CBAIC guidelines came up with 7 (seven) suggested behaviors. Most backyard owners claim to practice five out of the seven suggested behaviors.

1

## Commonly Practiced

Wash hands with soap after handling poultry

Do not process or sell or consume sick poultry

Physically separate new flocks from old ones (for 2 weeks)

Use plastic bag to pick up dead poultry

Bury dead poultry

2

## Less Practiced

Establish meeting points for traders and collectors

Report death of poultry



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# Backyard Owners

1

## Commonly Practiced

### Do not process or sell or consume sick poultry

- Feel responsibility for selling tainted product, so motivation for this is relatively high.

### Physically separate new flocks from old ones (for 2 weeks)

- This was practiced to some extent in traditional breeding before AI, but in the belief that flocks needed to adapt to each other.

### Establish meeting points for traders and collectors

- This behavior is considered not practical. No commonly agreed place, scale is small, easier to rely on traders coming to the farm.

- Team Flu Burung and Aksi 100% Bersih making progress on these outcomes.
- Consider how to integrate small producers into the larger value chain that has become the focus of AI control.



# Consumers

- Based on CBAIC guidelines, there are 4 (four) suggested behaviors for household/ consumers:
  - **Wash hands with soap** and **do not consume sick poultry**, which are practiced by many.
  - The suggested behavior **slaughter chicken before leaving the market** \*is considered irrelevant as generally most buy chicken meat and not live chicken from the market, therefore less or not practiced.

1

## Commonly Practiced

Wash hands with soap after handling poultry

Do not consume sick poultry

2

## Moderately Practiced

Safe preparation for consumption

3

## Less Practiced\*

Slaughter chicken before leaving the market



# Consumers

## Commonly Practiced

### Do not consume sick poultry

- Equipped with knowledge on avian flu received from various sources, **including the AI team**, consumers no longer consume meat from suspected sick poultry for fear of being infected with the disease.
- They have also become more knowledgeable on selecting healthy chicken.

### Slaughter chicken before leaving the market

- Fairly rare practice to bring live chickens home.
- Those who do are motivated in part by religious reasons, but do not always trust the market to provide quality goods.

- Provide concepts for demand driven quality improvement in the commercial chain.



# Live-bird Market Vendors

1

## Commonly Practiced

Accept and sell only healthy poultry

- “Responsibility” as good sellers. Selling sick poultry will result in lost of trust from consumers, in addition to the belief that it is a sin to deliberately sell bad quality product.

Clean cages, surfaces, utensils, equipment, etc., with detergent daily

Separate live bird slaughter area from sales area (within stall)

Collect and appropriately dispose of poultry waste.

All three dependent to some extent on market facilities but all impact on customer appeal and satisfaction.

- Data show significant progress associated with the Aksi 100% Bersih campaign and local activities by Team Flu Burung.
- Can build on this to motivate demand driven quality improvement in the commercial chain.



# Slaughterers

## 2 Moderately Practiced

Cull sick birds separately and dispose of dead birds appropriately

- While sick birds are culled and dead ones are usually buried, some slaughterers cater to customers who want carcasses and some waste products to feed fish.

## 3 Less Practiced

Appropriately dispose all poultry waste

- Largely dependent on market or public facilities and utilities for proper disposal options.

- Limited progress to date on these outcomes as the behaviors have economic value to the slaughterers and require infrastructural solutions in many cases.



# Traders/Collectors

## Challenges

Clean equipment  
with detergent and disinfectant

- This activity is perceived as healthy but also involves cost, so is more common among larger traders/collectors.

Not enter  
production area

- Scale poses problems for *ayam kampung* collectors, who collect from homes

Not bring  
any poultry back

- Intensive areas seeing more progress on this outcome, but partially dependent on availability of storage facilities and security at the market.

- Mobility and scale pose challenges for Team Flu Burung to work with these audiences.
- Separating stock is critical issue
- Motivate through demand for quality?—they are potentially a weak link that can affect their customers' value chain.



# Conclusions

- Data illustrate the power of integrated program strategies—combined mobilization at the community level, supported by a wide array of larger and smaller communication events and materials, broadcast, print and interpersonal
- Evidence is also strong for a focus on social influence processes: reinforcing positive social norms and encouraging widespread discussion about response to AI
- It will be important to take the value chain approach to the next level, crafting strategies and extending the role of Team Flu Burung and mass media to create demand driven quality improvements that benefit producers and consumers alike.



# Questions & Discussion

