Point-of-Decision Prompts Increase Walking in a Large Metropolitan Airport: The Walk to Fly Study

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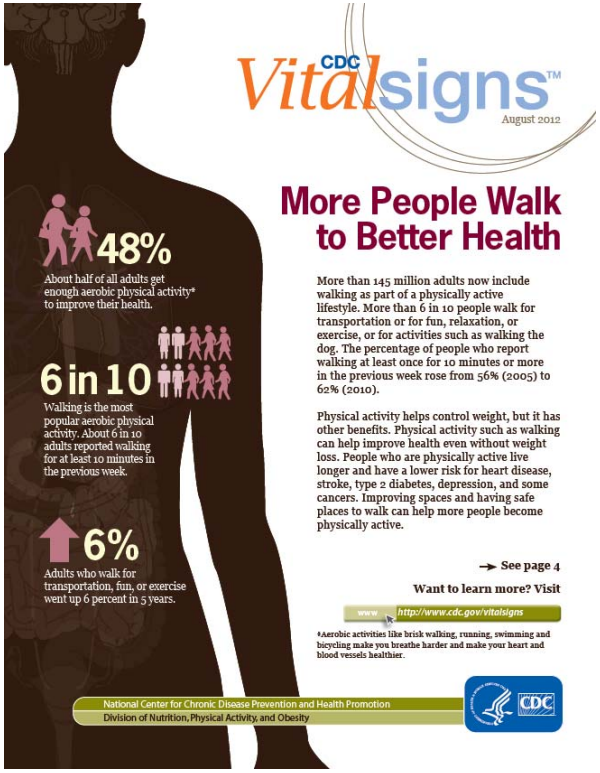
Walking in Airports?

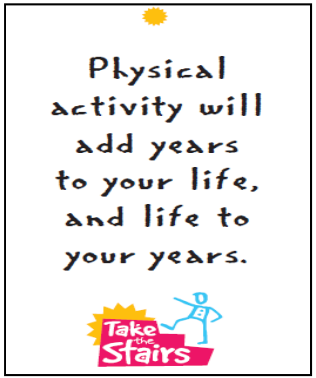


Point-of-Decision Prompts: A Recommended Strategy

The Effectiveness of Interventions to Increase Physical Activity

A Systematic Review

Emily B. Kahn, PhD, MPH, Leigh T. Ramsey, PhD, Ross C. Brownson, PhD, Gregory W. Heath, DHSc, MPH, Elizabeth H. Howze, ScD, Kenneth E. Powell, MD, MPH, Elaine J. Stone, PhD, MPH, Mummy W. Rajab, MS, Phaedra Corso, PhD, and the Task Force on Community Preventive Services



Kahn EB, et al. Am J Prev Med. 2002;22(4S):73–107.

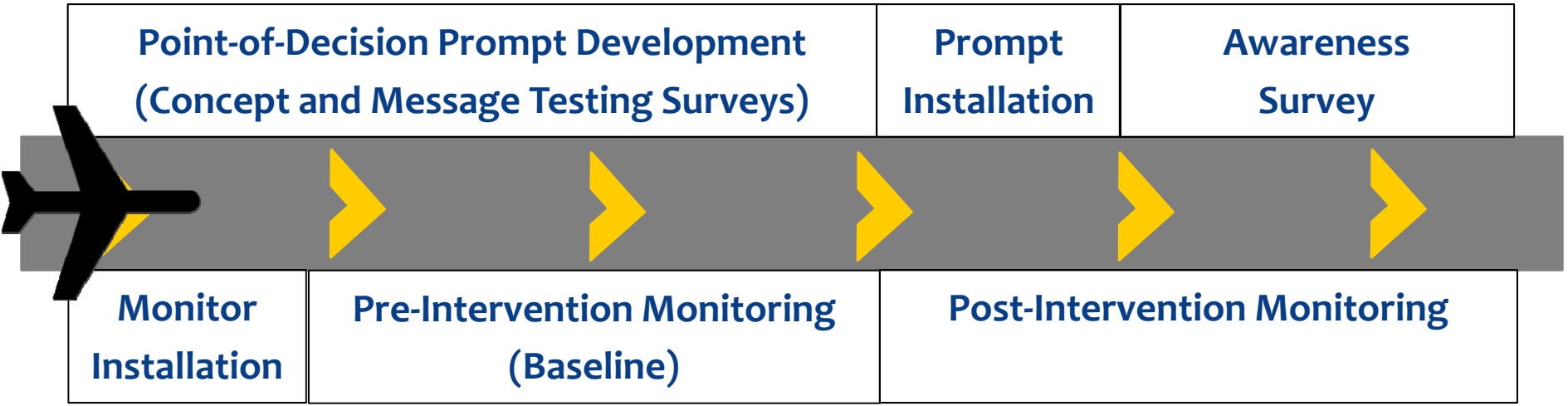
The Walk to Fly Study: Purpose

* Develop, implement, and evaluate the impact of a point-of-decision prompt intervention to encourage walking in a large metropolitan airport

A Point of Decision

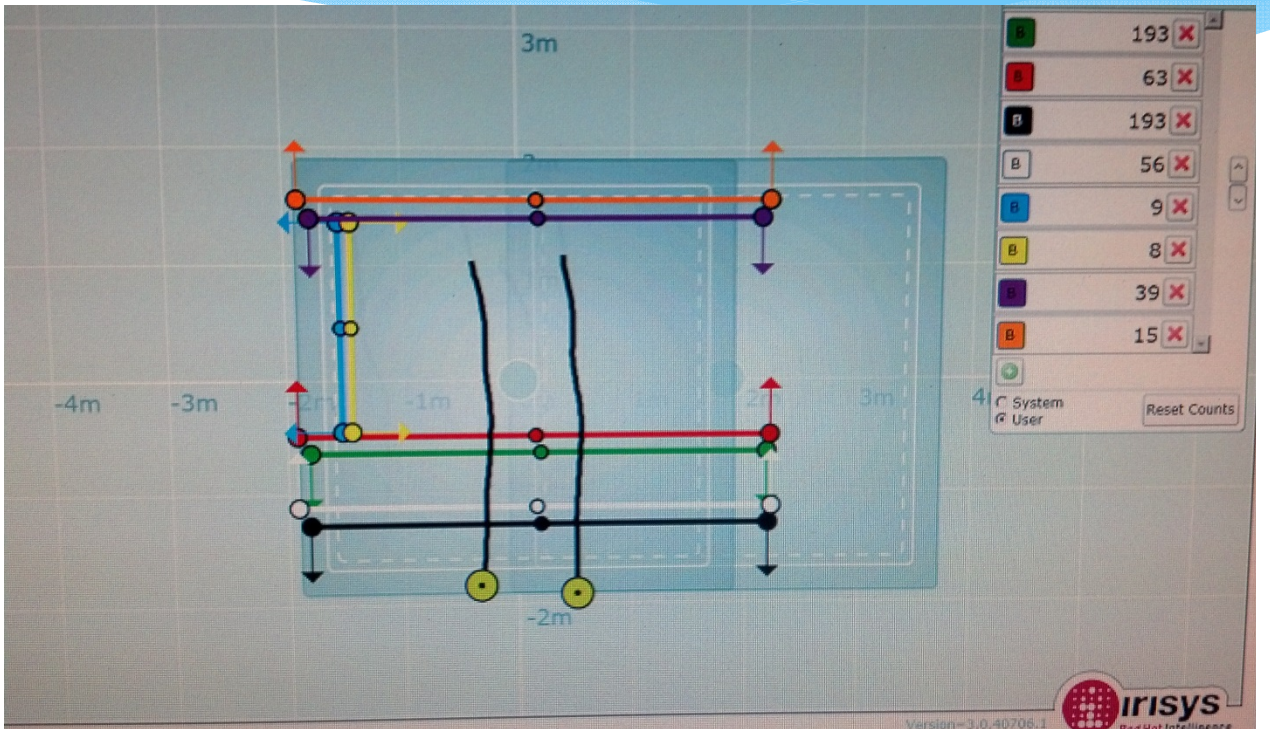
Study Design

Messaging

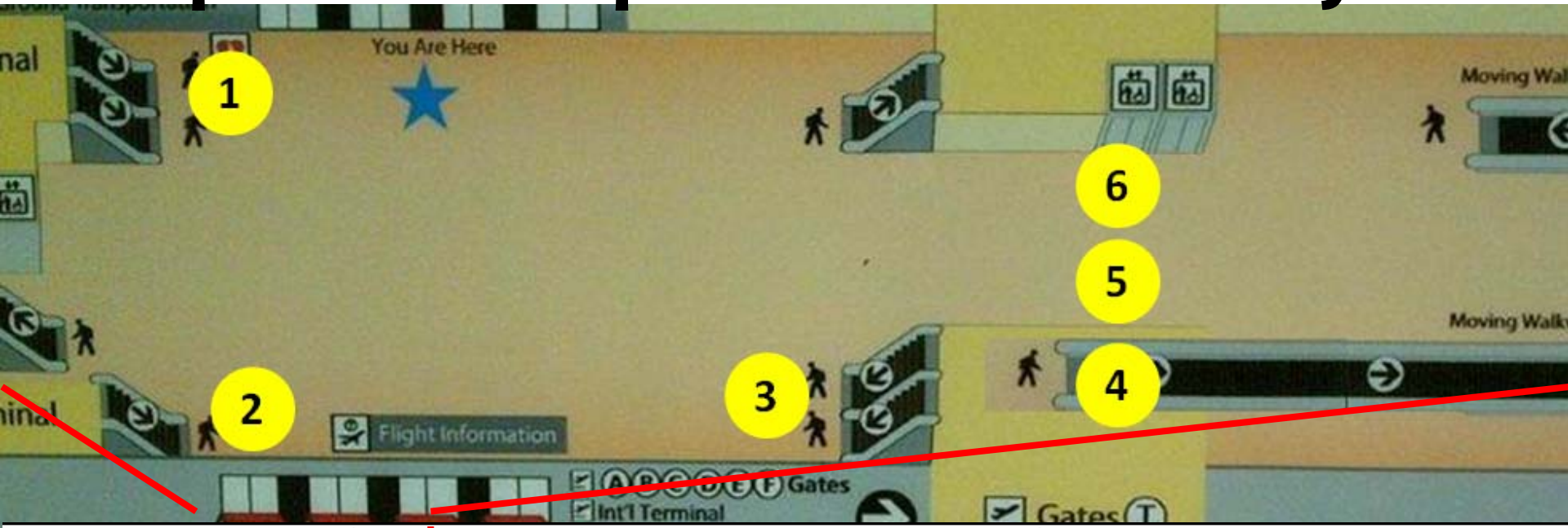


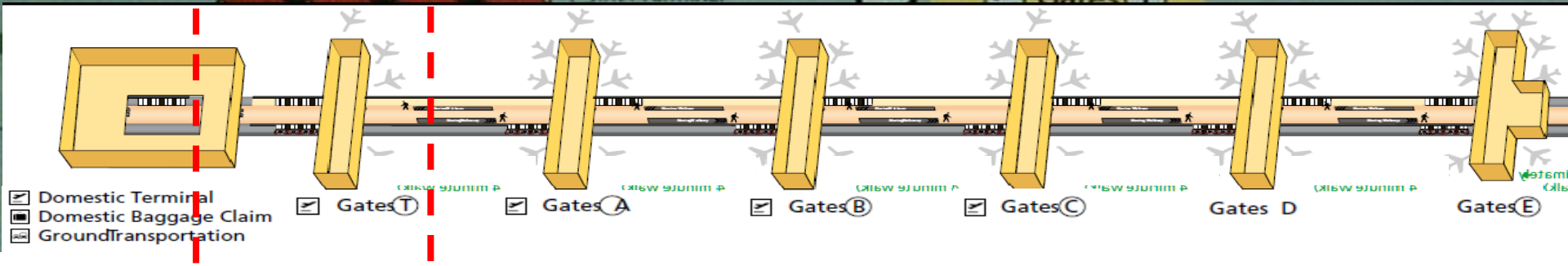
Monitoring

Ceiling-Mounted Infrared Monitors



Airport Transportation Mall Layout





Development and Evaluation of Point-of-Decision Prompts

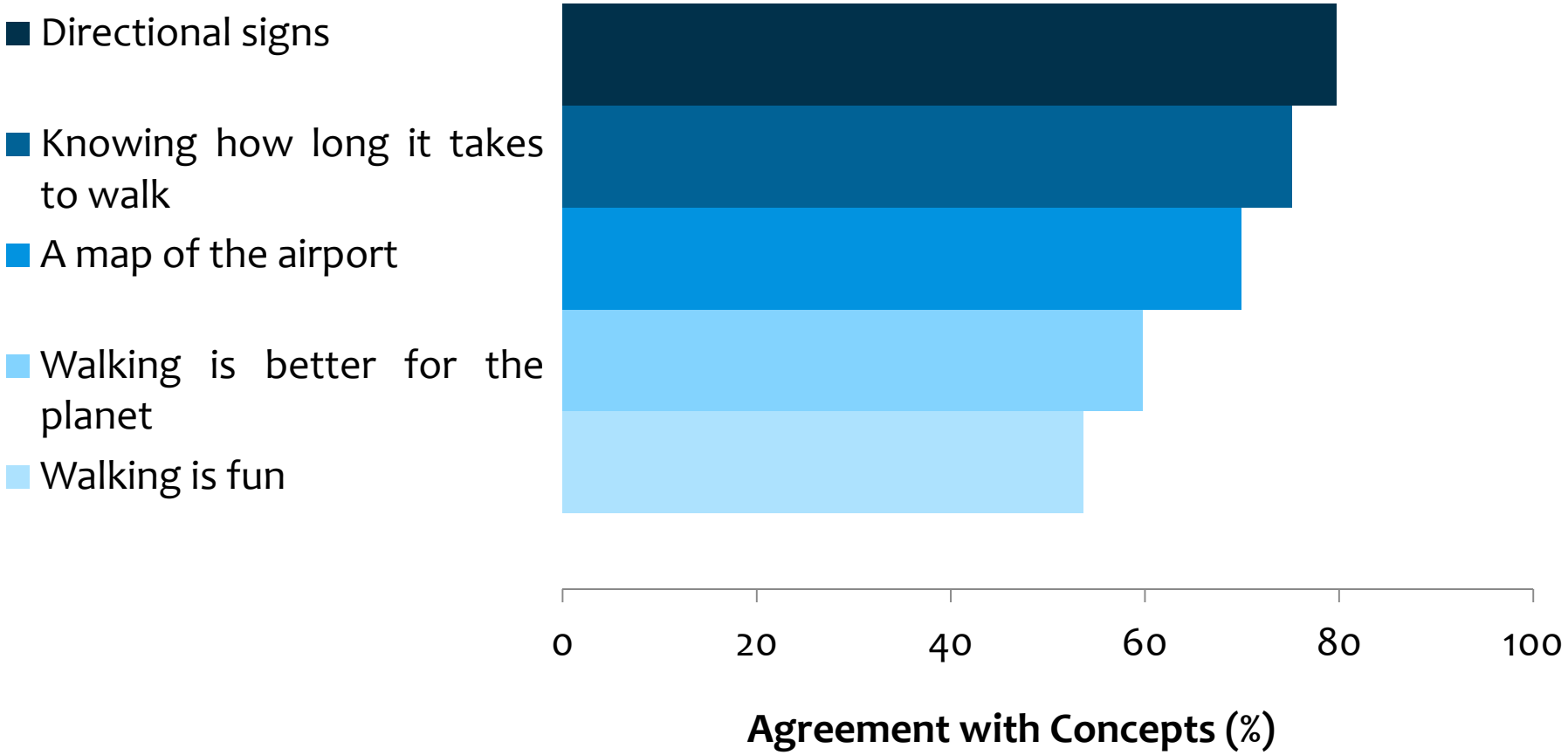
* Development
  * Surveys of random sample of airport travelers
  * Barriers to walking in the airport
  * Concepts to prompt walking
* Evaluation
  * Time-series analysis
    * Monitor counts, before versus after
    * Controlled for time of year and day of week

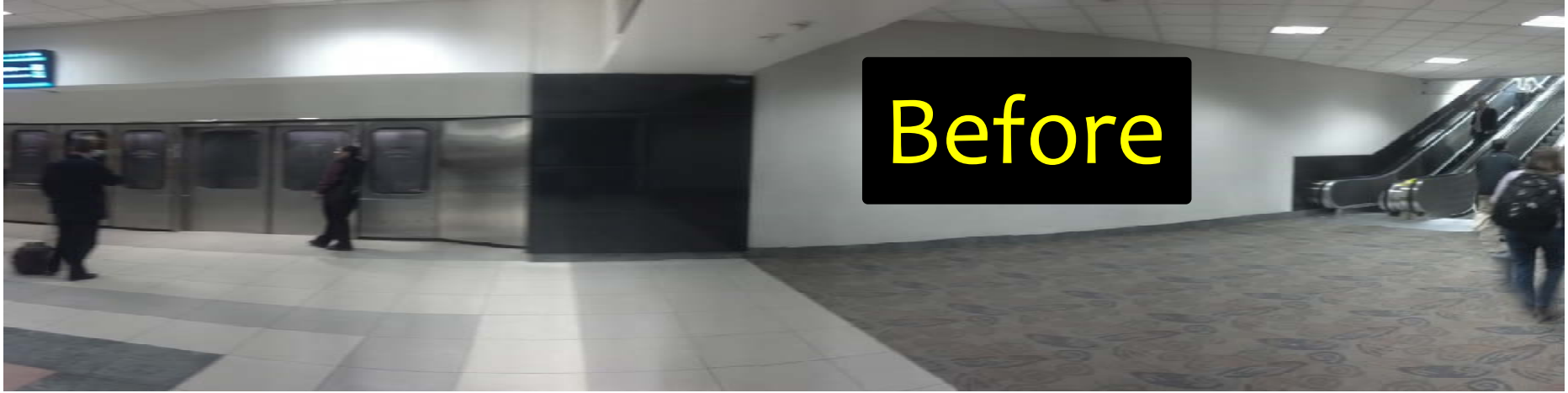
Airport Traveler Characteristics

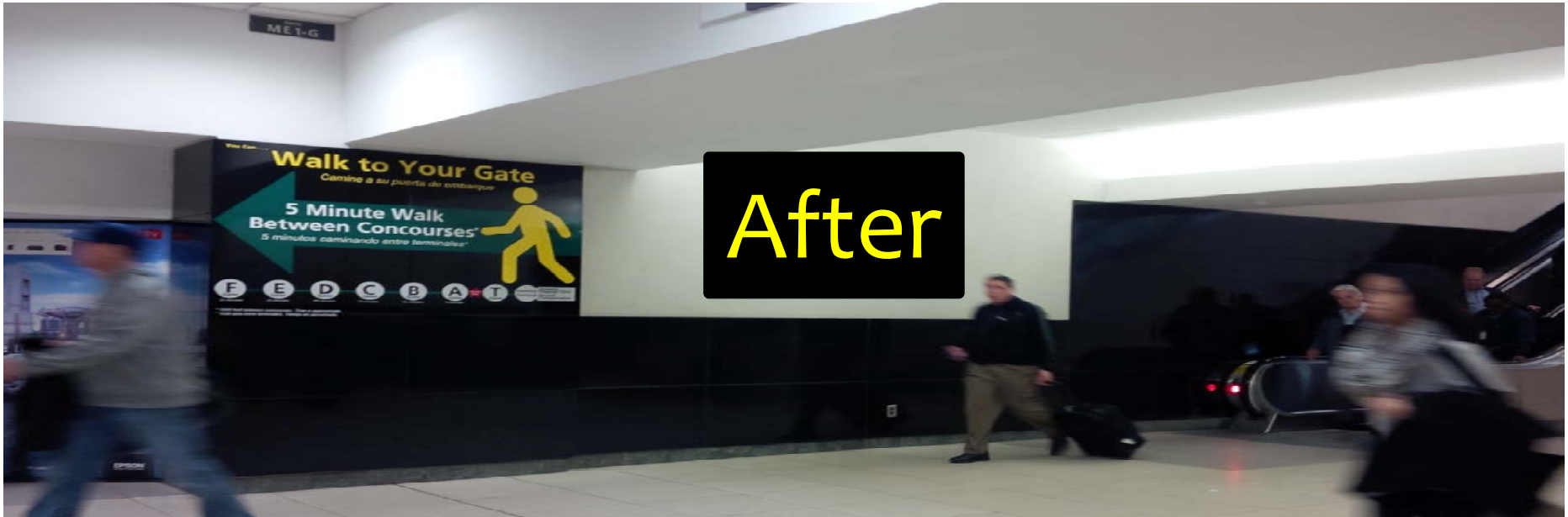
	Overall		Men		Women	
	n[a]	%[b]	n[a]	%[b]	n[a]	%[b]
Age group (years)						
18-44	55	38.3	31	40.0	24	35.2
45+	95	61.7	53	60.0	42	64.8
Travel Purpose						
Business	55	36.2	37	47.5	18	16.6
Leisure	85	58.2	41	47.3	44	77.3
Both	8	4.4	5	4.2	3	4.8
Other	2	1.1	1	1	1	1.3
Day of Week						
Weekday	103	65.1	58	62.0	45	70.5
Weekend	47	34.9	26	38.0	21	29.5
Total	150	100.0	84	100.0	66	100.0

[a] Weighted sample size; [b] Weighted percentages; some percentages do not sum to 100% due to rounding

What would encourage you to walk to your gate?

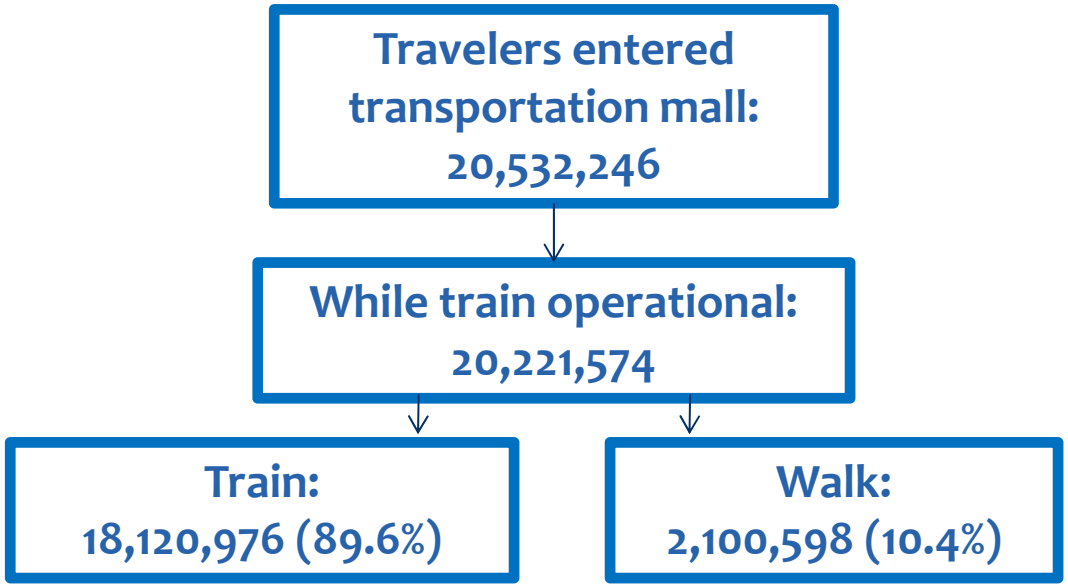



Before


MET-G
Walk to Your Gate
5 Minute Walk
Between Concourses
F E D C B A T
After

Before Intervention
Airport Traveler Traffic Patterns

June 15, 2013 – September 3, 2014



- 89.6% Train
- 10.4% Walk

Change in Walking

Walkers per day				
	Before prompts* (95% CI)	After prompts	Change	Percent change** (95% CI)
Overall	4717 (4377 - 5019)	5392	675	14.0 (7.9 – 22.0)
Weekday	5079 (4821 - 5318)	5741		13.0 (8.3 – 18.0)
Weekend	3911 (3753 - 4055)	4515		15.0 (12.0 – 19.0)

*Traveler counts estimated in the absence of intervention for the time period after installation of the prompts (September 4, 2014-February 19, 2015), based on counts prior to installation (June 15, 2013-September 3, 2014), adjusted for variation due to time of year and day of week.

**$p<0.01$ for all change values.

A Tale of Two ~~Cities~~ Minutes

* Wait 2 minutes, on average, see 70 people pass through transportation mall location
* Before signs, 7 would walk
* Now, 8 would walk

A Tale of ~~Two Cities~~ 1 City

* After prompts were installed, 114,084 additional people chose to walk

* Equivalent to population of Carlsbad, California

Conclusions

* Of 46,000 travelers / day entering transportation mall of a large metropolitan airport:
  * Point-of-decision prompts increased number of travelers walking by 14%, ~ 675 travelers / day
  * Increase has remained steady over 5 months

Implications for Policy and Practice

* Providing information may help people make the active choice

REDUCED FAT MILK
2% Milkfat

Nutrition Facts

Serving Size 1 cup (236ml)
Servings Per Container 1

Amount Per Serving
Calories 120 Calories from Fat 45

	% Daily Value*
Total Fat 5g	8%
Saturated Fat 3g	15%
Trans Fat 0g	
Cholesterol 20mg	7%
Sodium 120mg	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 9g	17%

Vitamin A 10% • Vitamin C 4%
Calcium 30% • Iron 0% • Vitamin D 25%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs

NONFAT MILK

Nutrition Facts

Serving Size 1 cup (236ml)
Servings Per Container 1

Amount Per Serving
Calories 80 Calories from Fat 0

	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol Less than 5mg	0%
Sodium 120mg	5%
Total Carbohydrate 11g	4%
Dietary Fiber 0g	0%
Sugars 11g	
Protein 9g	17%

Vitamin A 10% • Vitamin C 4%
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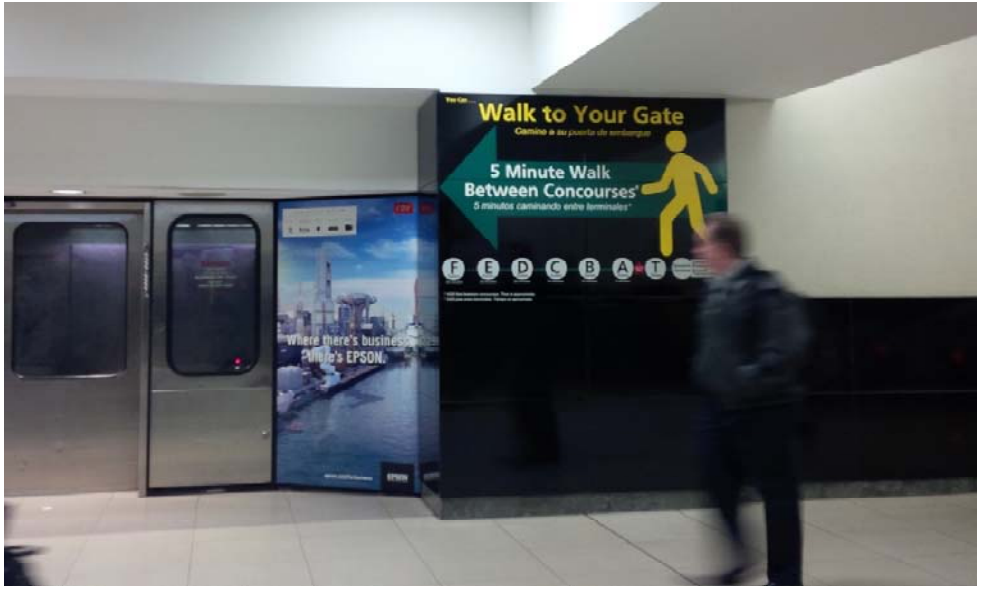


Application to Other Sectors: Transportation

Raleigh, NC

* Pedestrian signage policies
* Walking directions
  * Time it takes to walk
  * Distance

One small nudge for man, one giant nudge for mankind!

Thank You!

Questions?

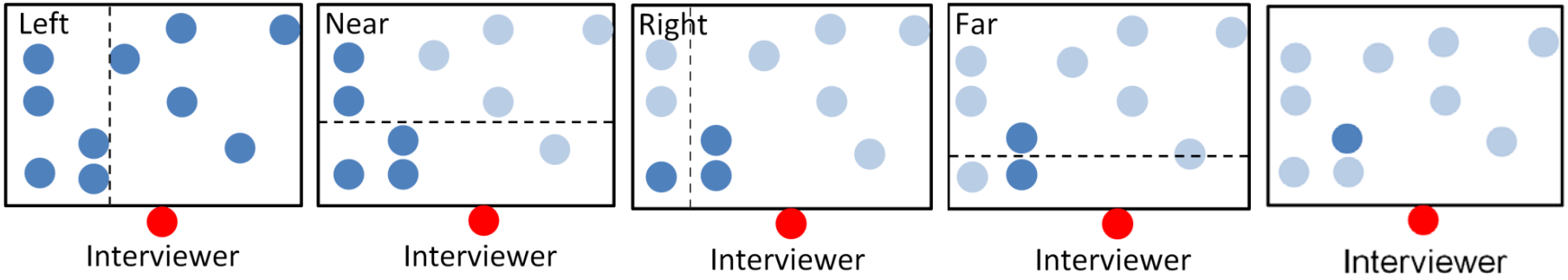
AIR-TRaCS:

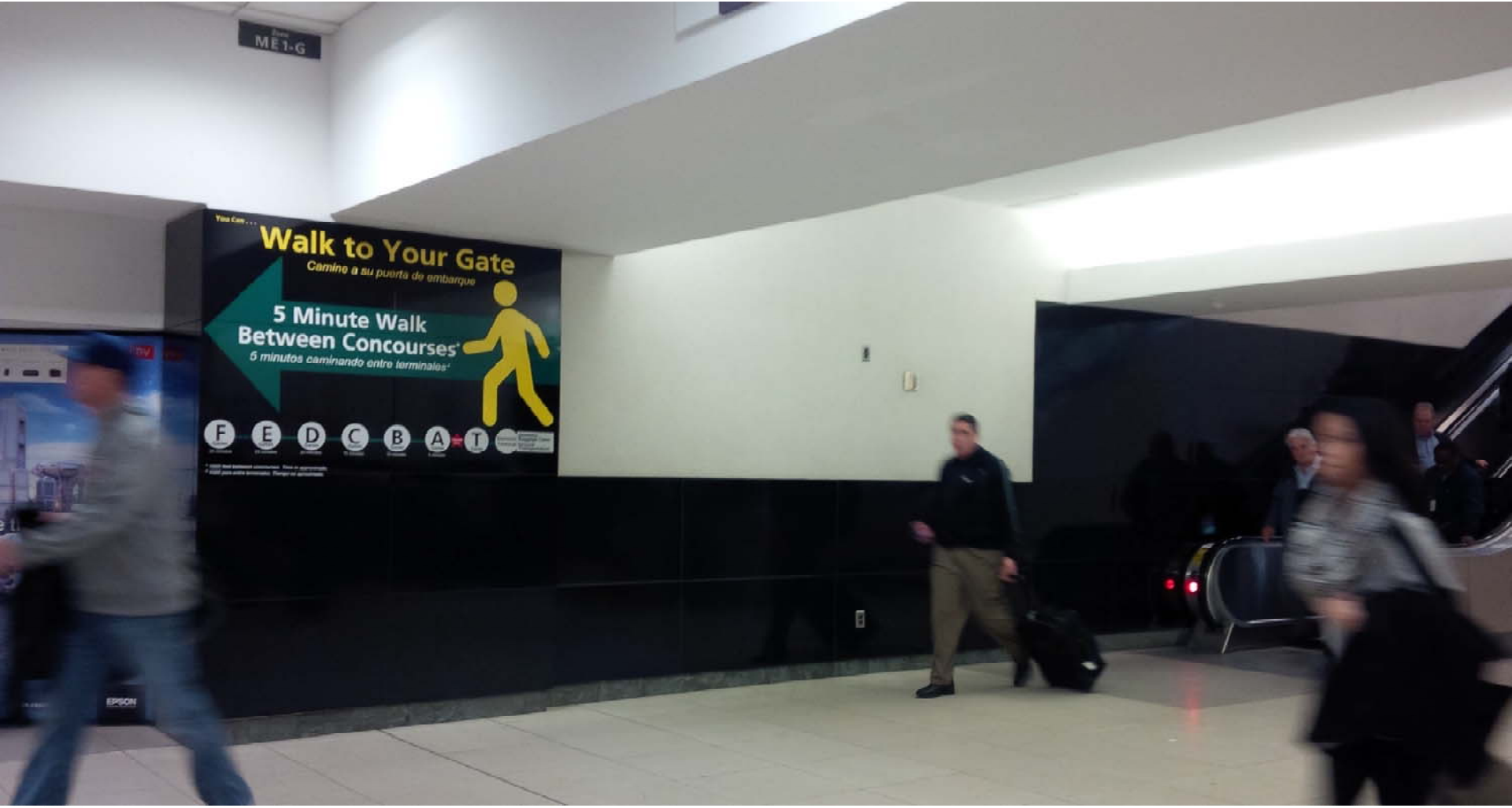
An Innovative Rapid Technique for Random Crowd Sampling

Area	Set 1	Set 2	Set 3
A18	LNRF LFRN	RNLF RFRF	RFLN RFLF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A21	LNLN LNLN	LFLF LNLF	LFLN LFLF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A1	RFLF LFLF	LNLN RNRF	LNRF RNLF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A5	RFLN RNRN	RNLF LFLF	RFRN LNLN
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A6	RNRF LFLN	LFRF RNLF	RFLF RNLF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A8	LNRF LNRF	LNRN RFRN	RNLN RNLF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A12	LFLF LFRN	RFLF LFRN	LNLN LFRF
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			
A15	LNRF LFRF	RFRF RFLF	LNLN LFLN
	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other	O Sleep O Phone O U18 O Other
Comments			

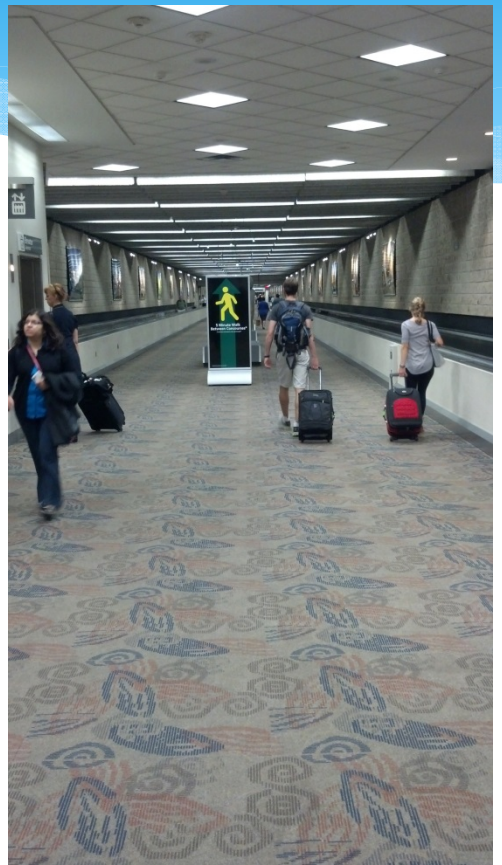
AIR-TRaCS:

Sequence: L N R F L F R N

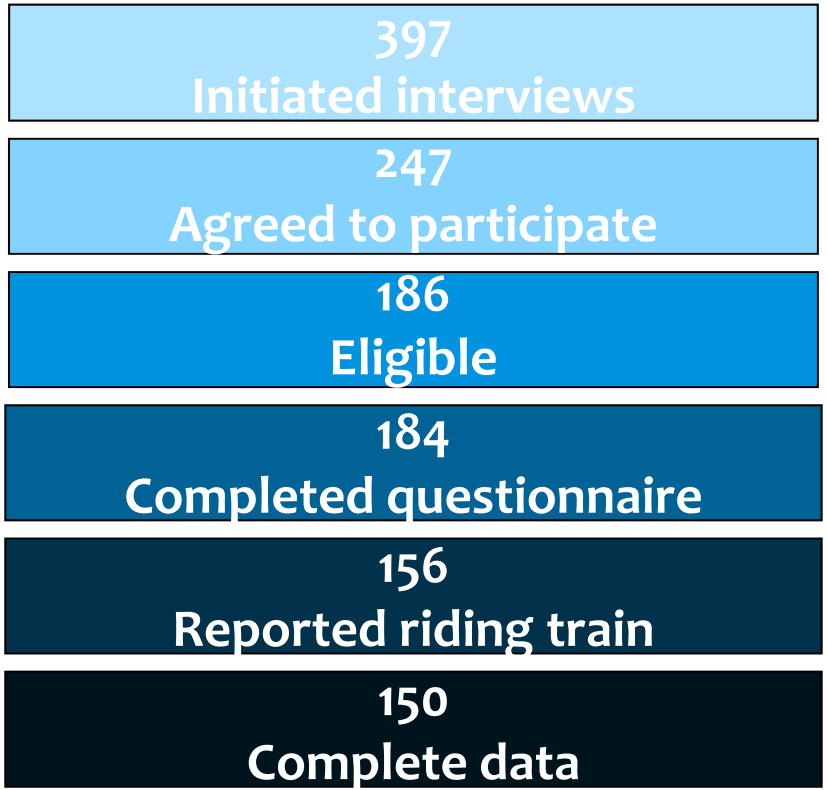



ME1-G
You Can . . .
Walk to Your Gate
Camine a su puerta de embarque
5 Minute Walk
Between Concourses*
5 minutos caminando entre terminales*
F
E
D
C
B
A
T
EPSON

Standing Sign in Transportation Mall



Analytic Sample



Change in Traveler Traffic Patterns

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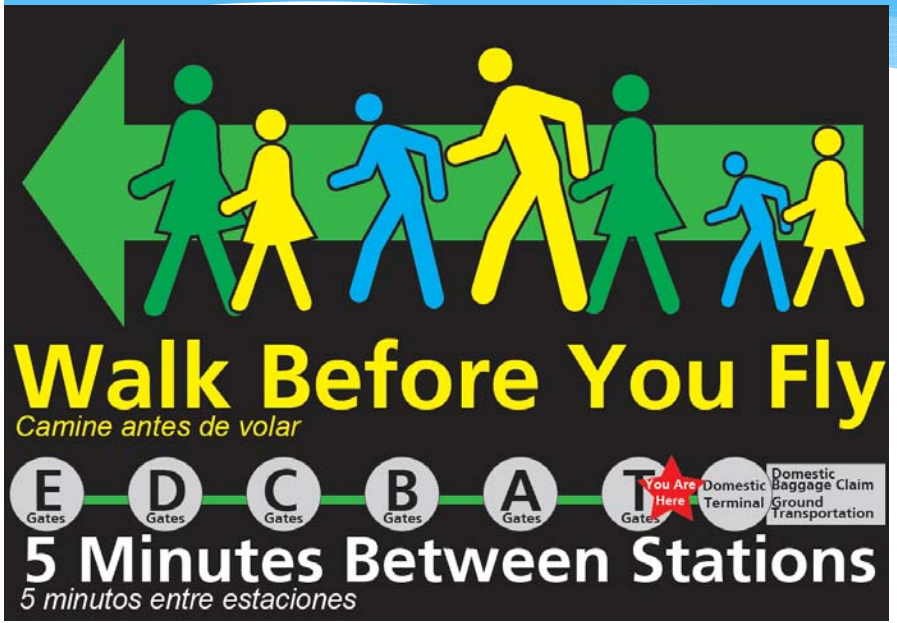
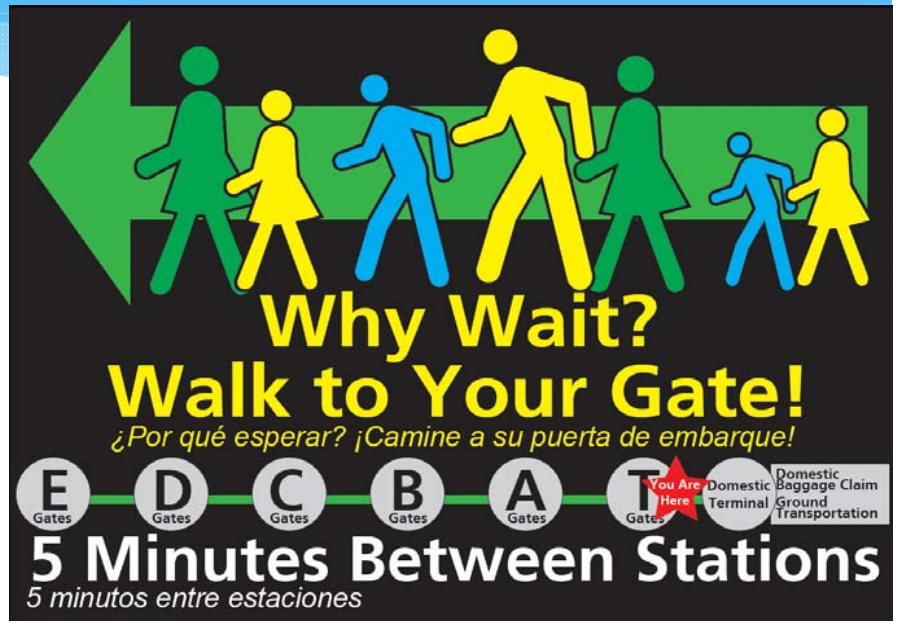
**$p<0.01$ for all change values based on Bayesian posterior tail area.

Message Testing Survey





Is the sign clear?

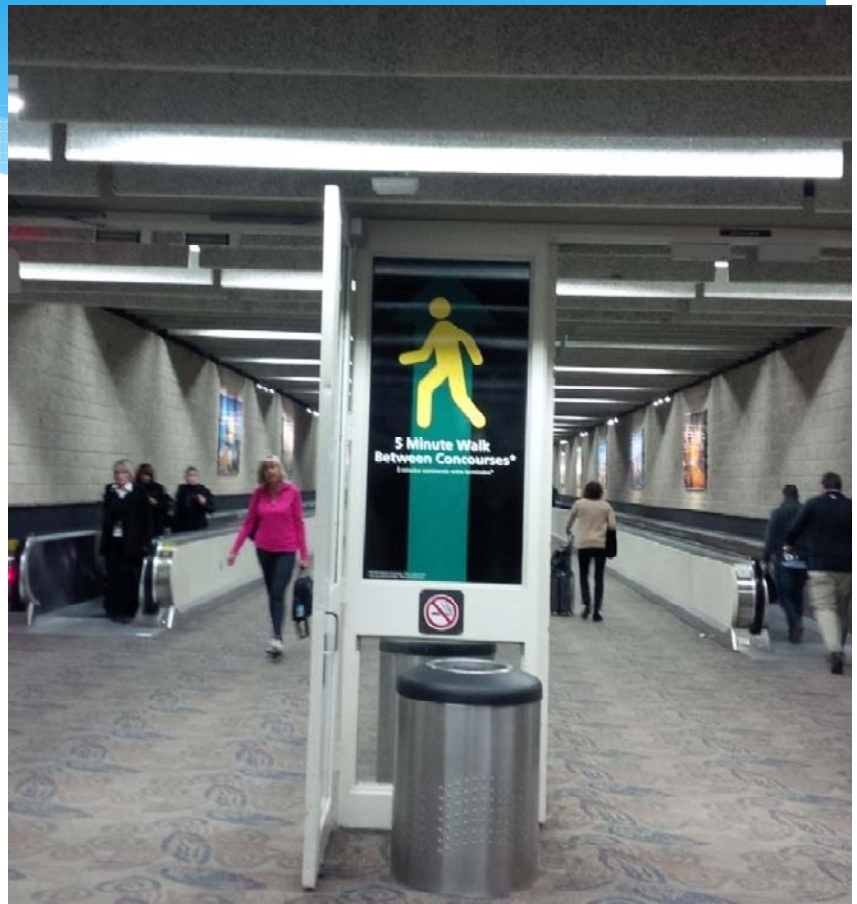
Which sign do you prefer?

Do you have any suggestions for improving the signs?

Message Testing Findings: Summary

* **De-clutter**
* **Remove walking people**
* **Make time stand out more**
* **Make arrow stand out more**
* **Show time between multiple concourses**
* **Use shorter message**

Transportation Mall Walkway



Barriers to Airport Walking

Themes	Barriers to Walking	Standardized Factor Loading
Modifiable Barriers	Everyone else was riding the train.	0.85*
	I was afraid of getting lost.	0.33*
	I did not know walking was an option.	0.32*
Non-Modifiable Barriers	I did not want to sweat.	0.88*
	I am not wearing suitable clothing for walking.	0.48*
	Riding the train is more fun than walking.	0.30*
	Walking was not fast enough	0.29*
	I do not like walking.	0.15
	Walking was too difficult.	0.03

*Significant loadings ($p < 0.05$)