

# Seasonal yield variation and related response patterns in address-based mail samples

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AAPOR 2011

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A SURVEY FOR YOU

Probability-based, nationally representative online panel

Includes:

- Recruited non-Internet households
  - KN provides a laptop computer and free monthly ISP
- Cell phone only/mostly households
- Spanish-language households

Extensive profile data maintained on member demographics, attitudes, opinions, behaviors, etc.

Samples from the panel are assigned to client studies using e-mail invitations and a link to the online survey questionnaire

# Study design

- On-going recruitment is done by mail to off-set attrition
- In 2010 KN did 8 national recruitment mailings (4 samples, 2 waves each to all 50 states. **Each wave = 22,500 residential addresses**)
- An ABS frame was used (*USPS Delivery Sequence File*)
- All samples had identical stratified design, mailing methods and print materials
- Respondents could choose to reply by mail, online or through a toll-free telephone mode [also, outbound call recruitment took place]
- All mail materials and response modes had English and Spanish presentations/options
- Only difference was mailing date (time of year) for each sample
- **It was observed that response patterns varied by time of year**

# Research Question

*Is the variation in yield the result of a seasonal effect?*

- Conventional survey wisdom has been that the best time of year to do surveys is January-March and possibly in the Fall after Labor Day
- Some say avoid the summer because people are on vacation and generally not as available
- Little concrete evidence that time of year has a significant effect on response (*Dillman, Clark and Treat, 1994*)\*
- Certainly avoid the Thanksgiving to New Year holiday period, mostly due to craziness at the post office and people are overwhelmed

*Is this all true for panel recruitment? (I'd say 'Yes' on the last point)*

\* Dillman, DA, Clark, JR, & Treat, J. (1994) *Annual research conference proceedings* (pp. 137-159) Washington D.C.: U.S. Bureau of the Census.

# Yield and response

## Key definitions:

**Yield** is the raw percent of addresses that provide a response out of all addresses mailed (no adjustments to denominator)

It is not the number of panel members recruited since KN recruits multiple people per address (ages 13 and older)

**Response** here is either the number of addresses from which “at least one person expresses interest in joining the panel” or, if expressed as a percent, it is used here the same as the yield

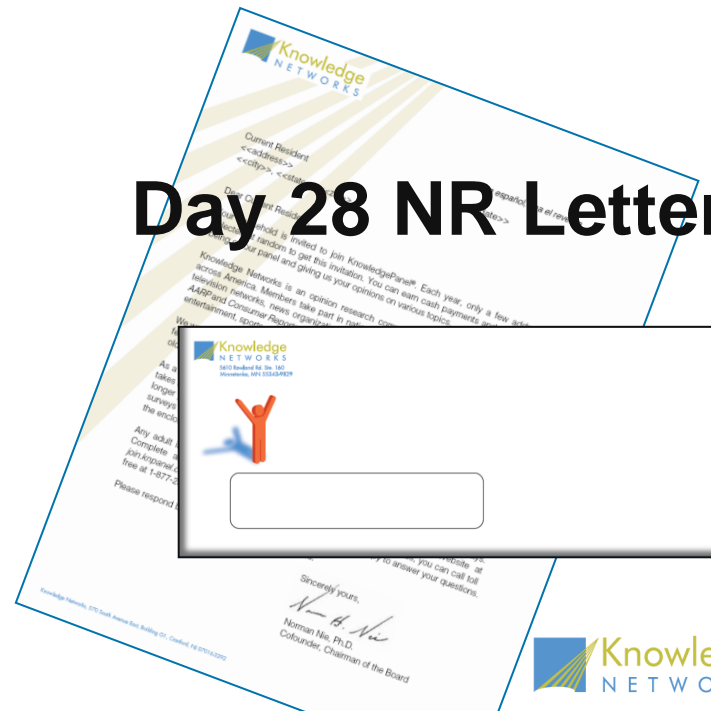
It is not a “response rate”

# Mail Materials and Schedule

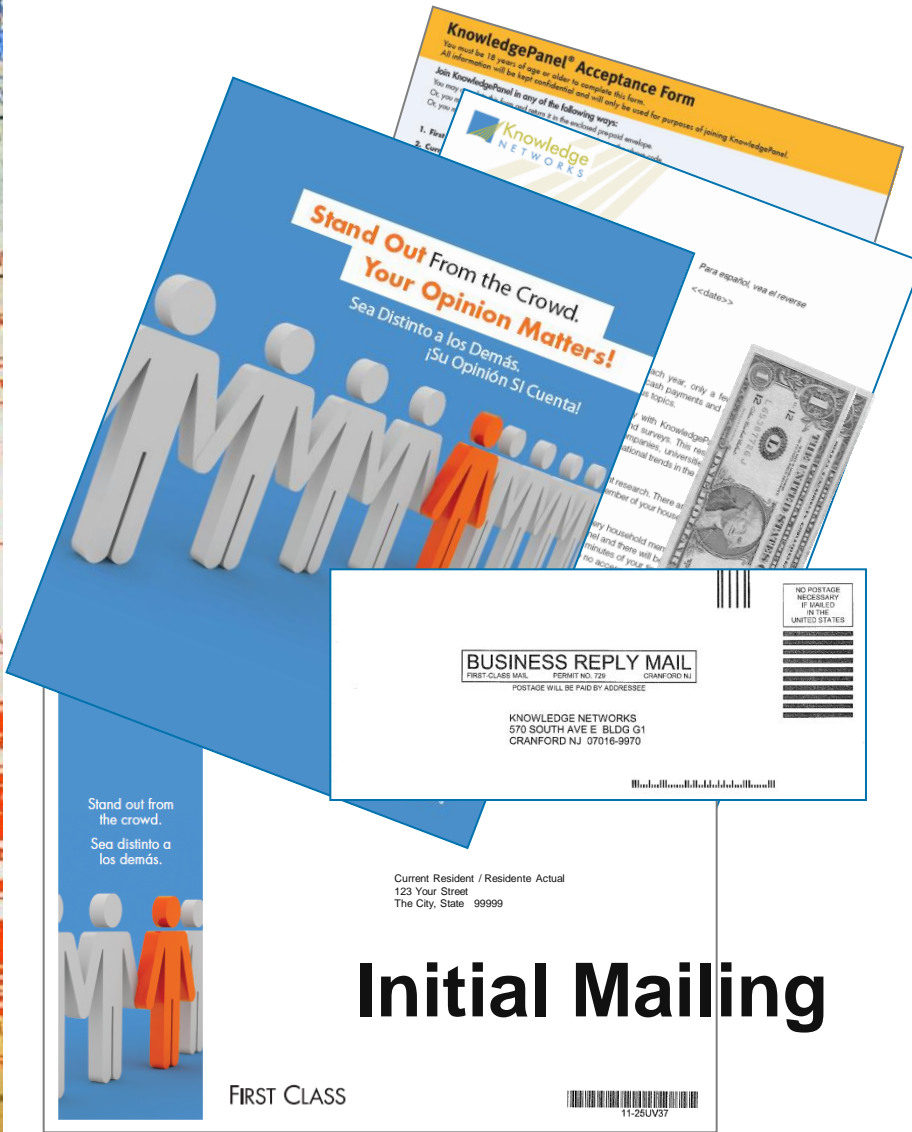
## Day 7 Reminder PC



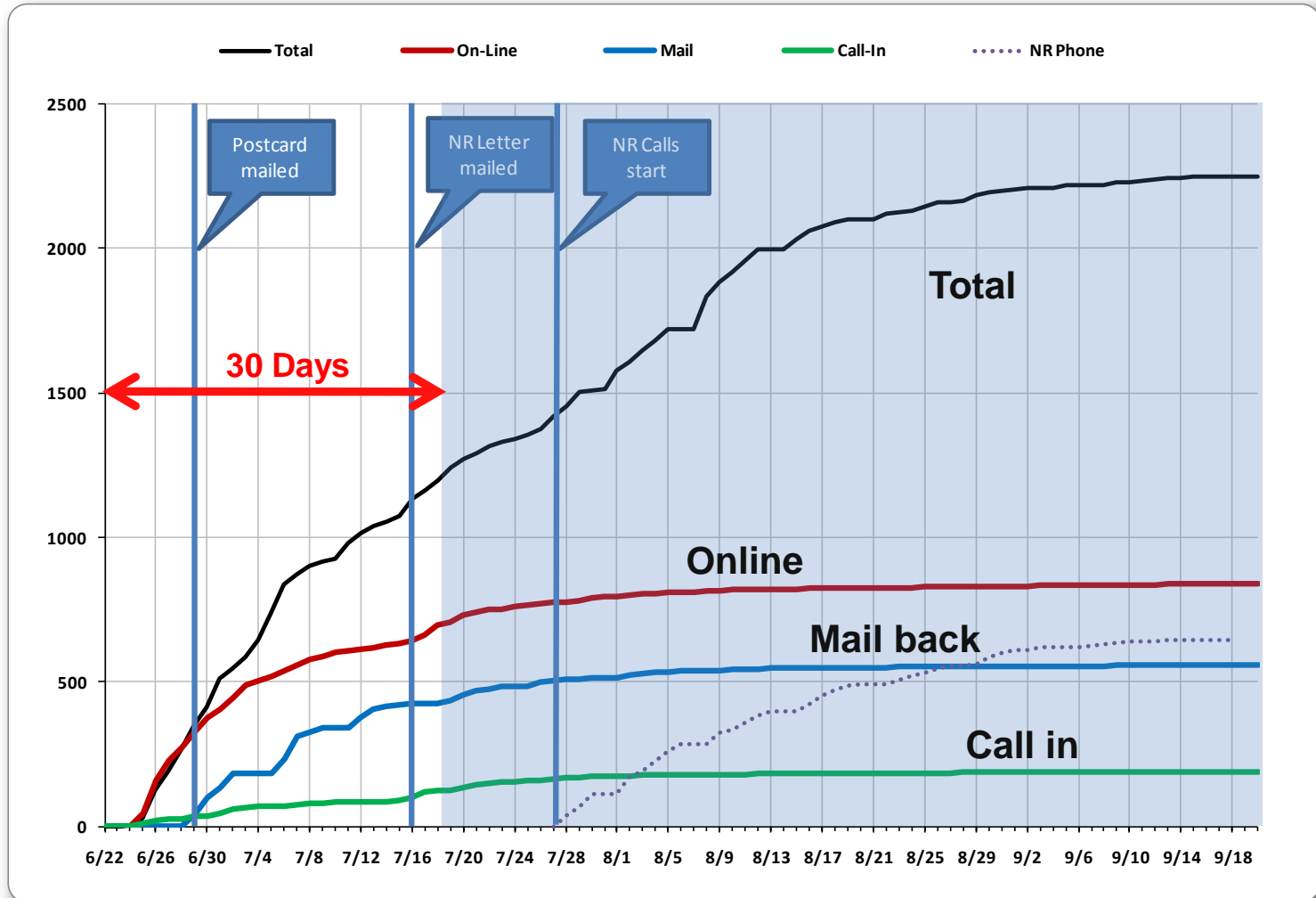
## Day 28 NR Letter



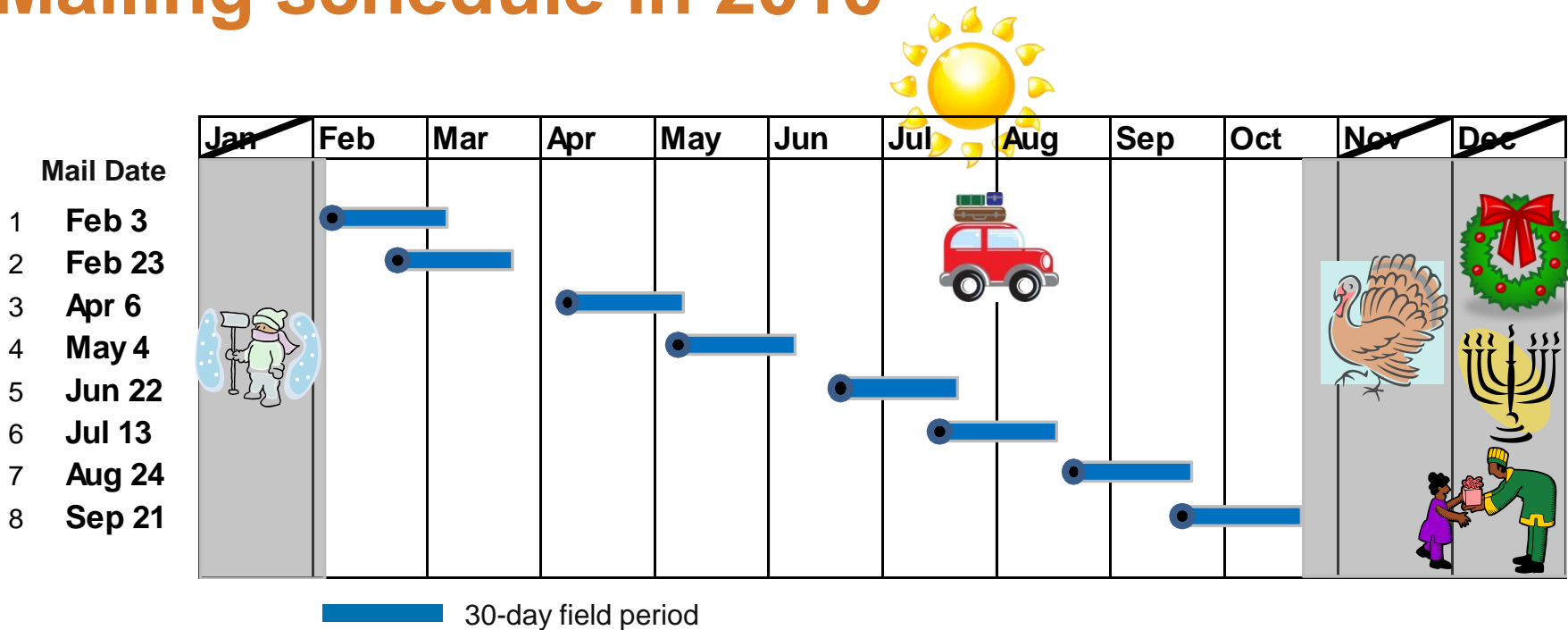
## Initial Mailing



# Tracking cumulative response by mode

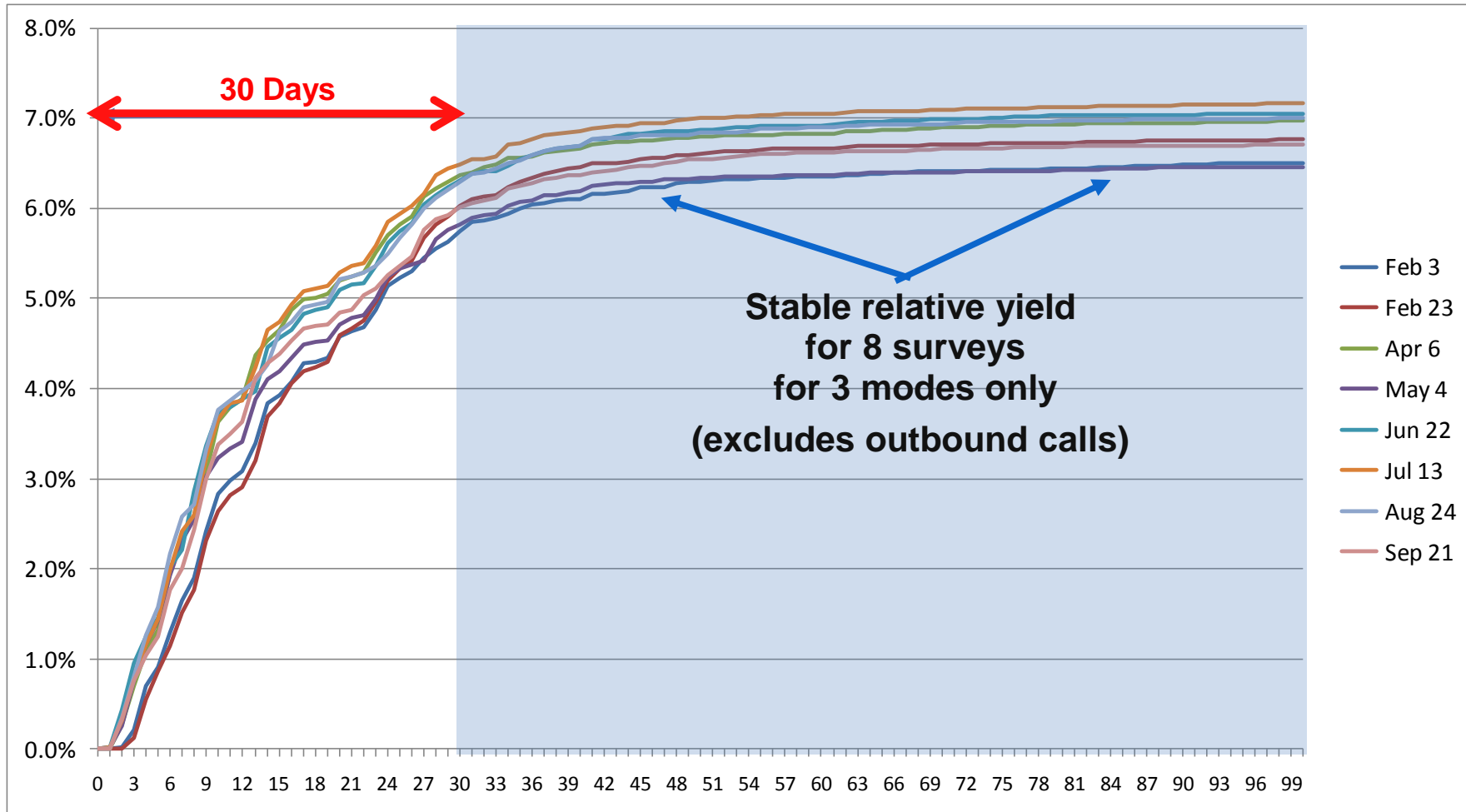


# Mailing schedule in 2010

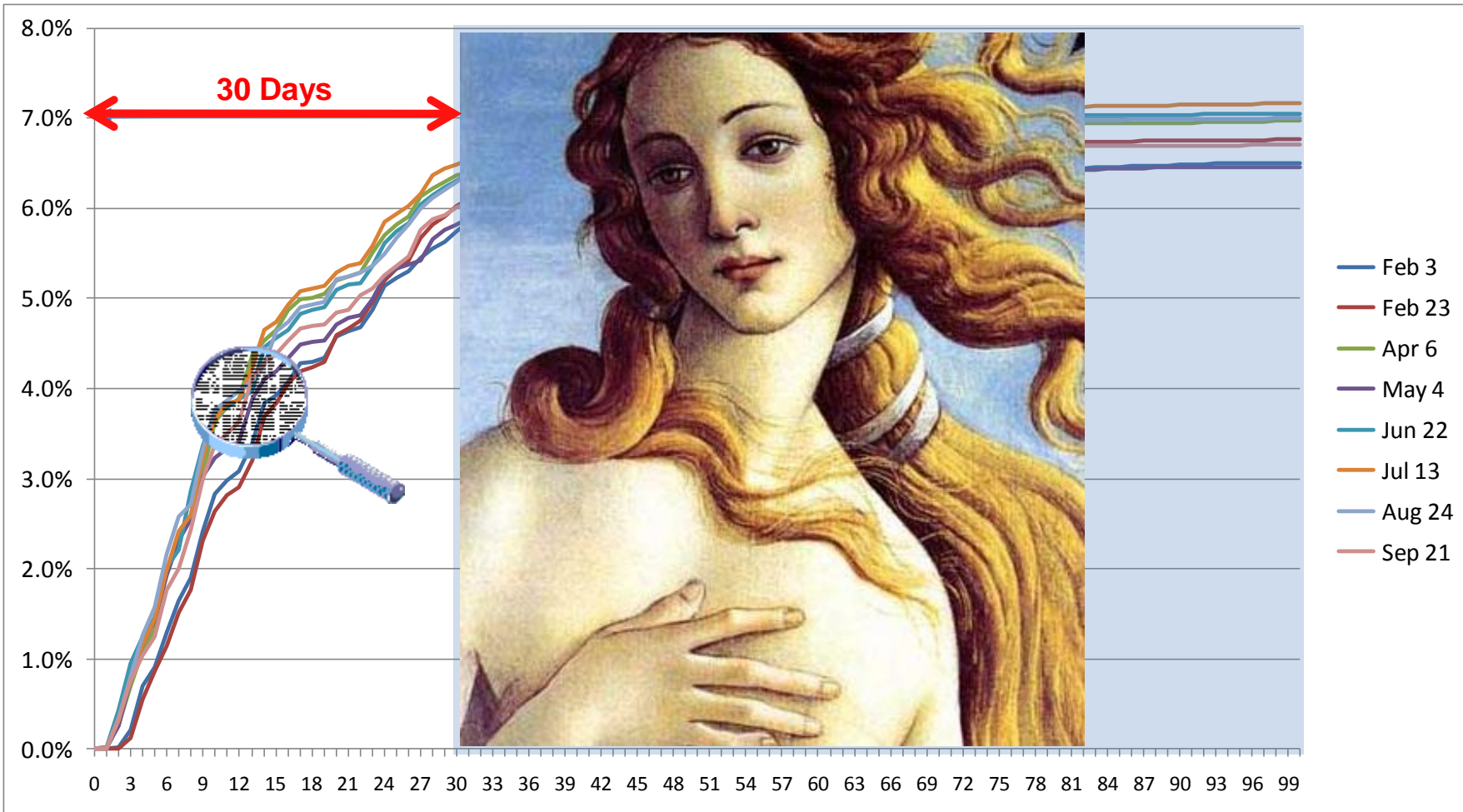


8 recruitment surveys fielded  
 All initial mailings were on a Tuesday

# First 30 days: cumulative yield action window - 3 modes

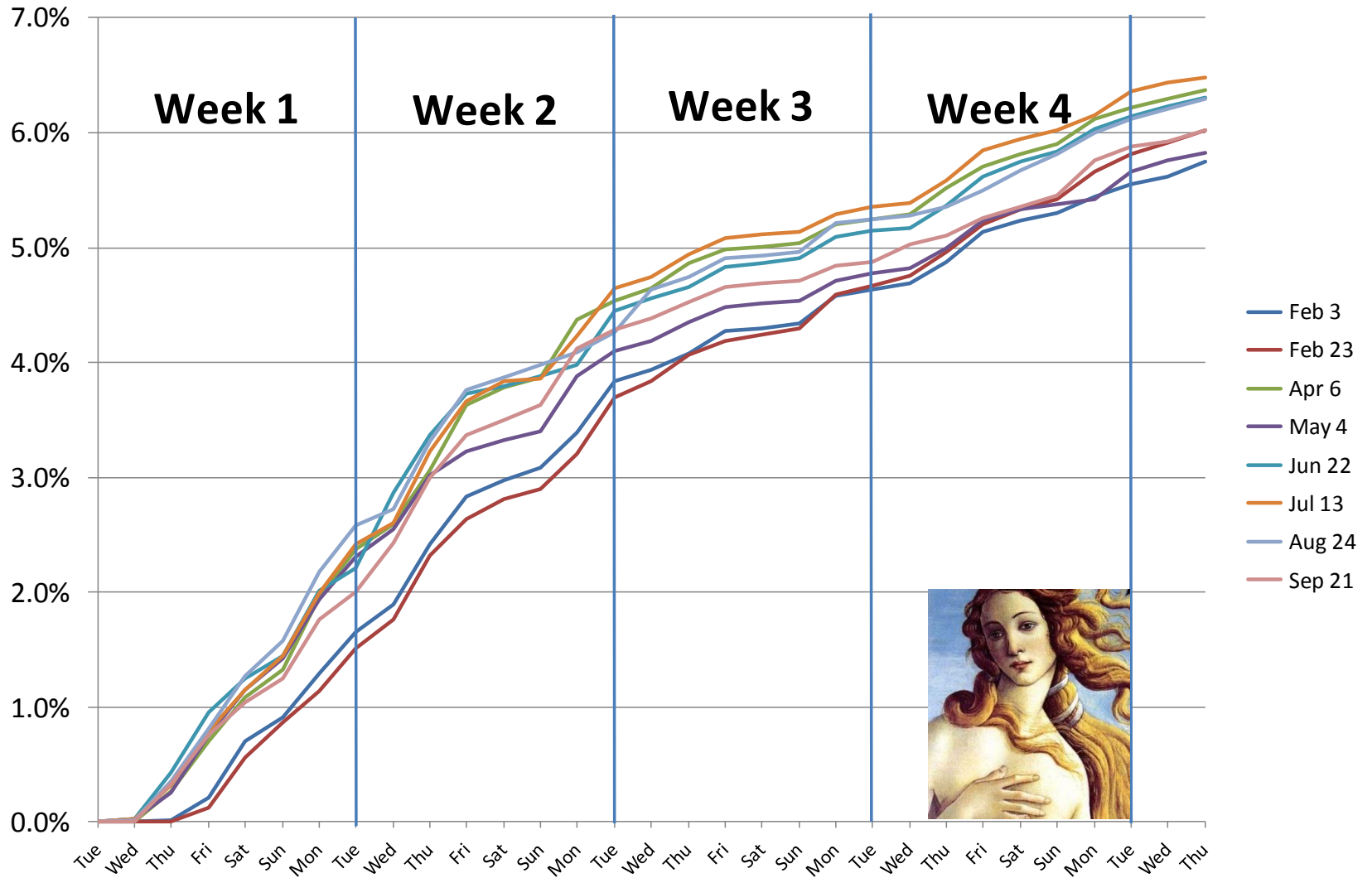


# Response curves as a thing of beauty

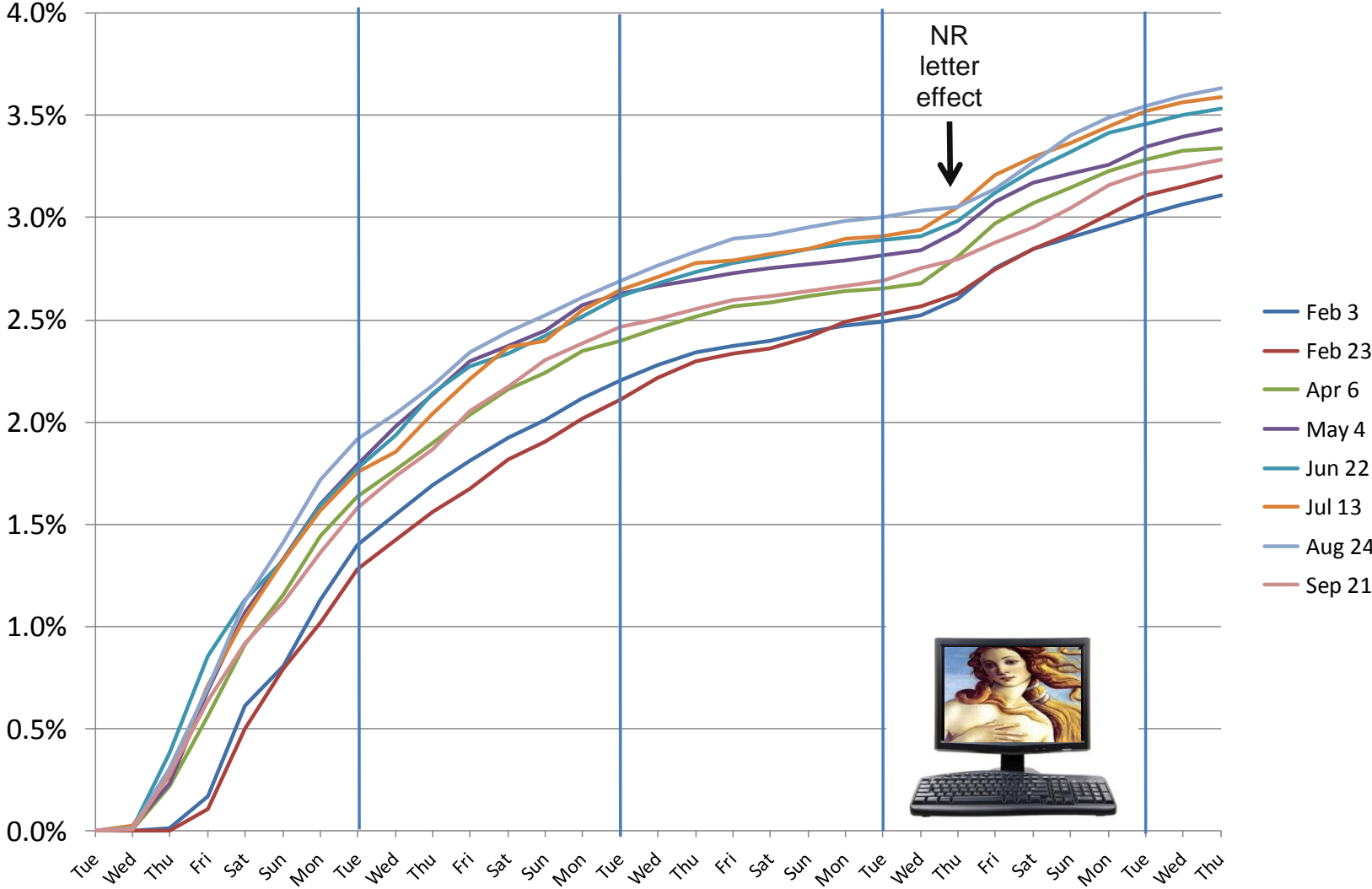


The Birth of Venus (*detail*) c.1486; painting by Sandro Botticelli

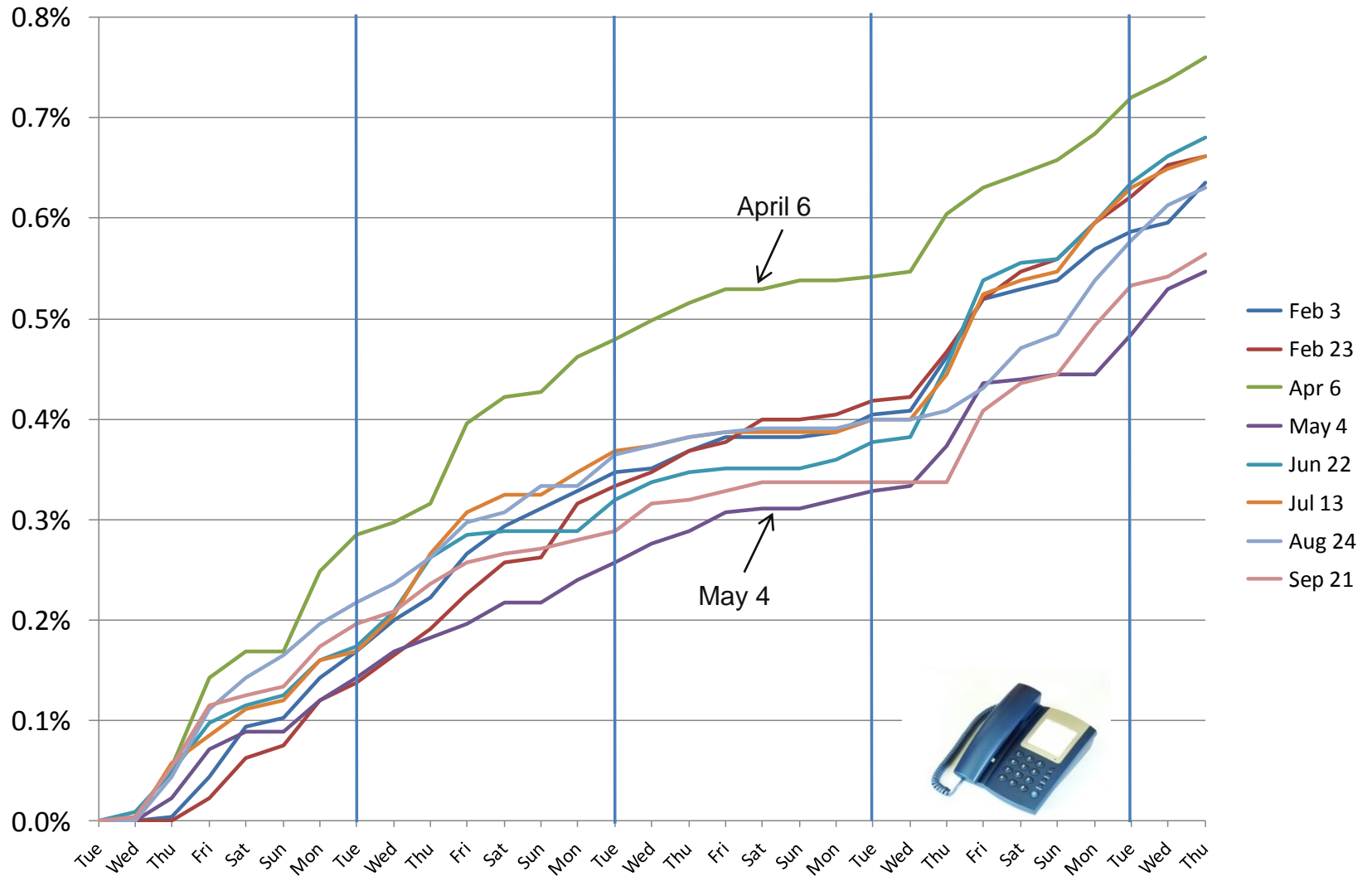
# Observed variation in yields – all 3 modes



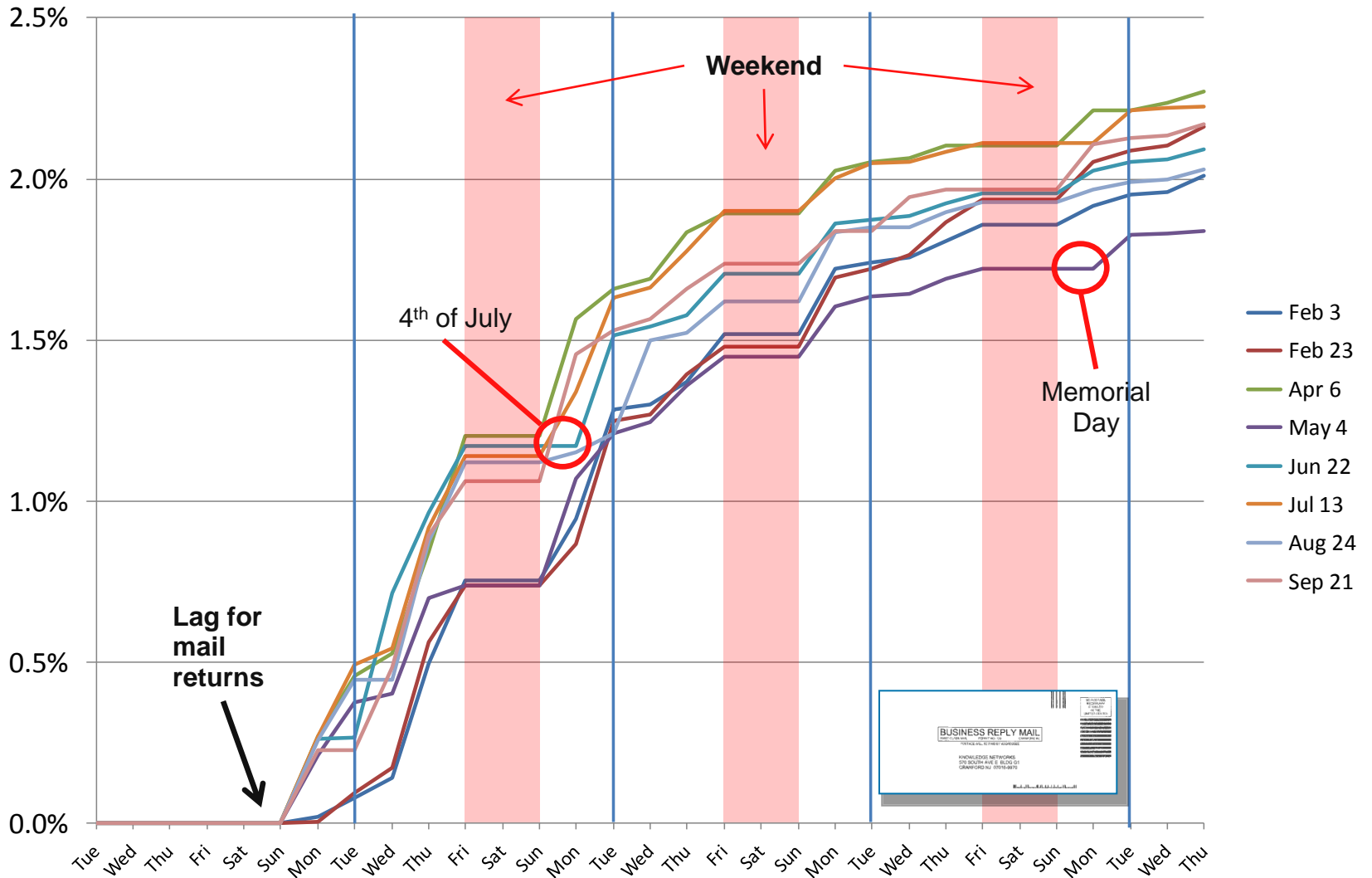
# Online cumulative response



# Telephone call-in cumulative response



# Mail-back cumulative response

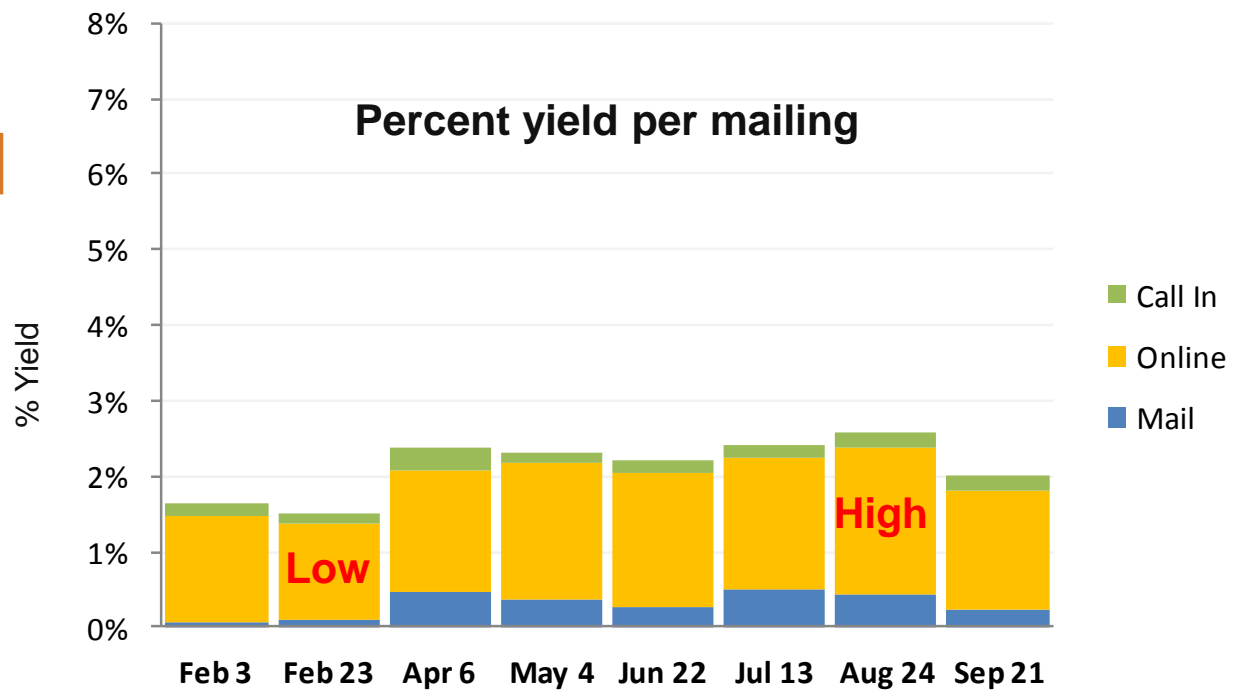




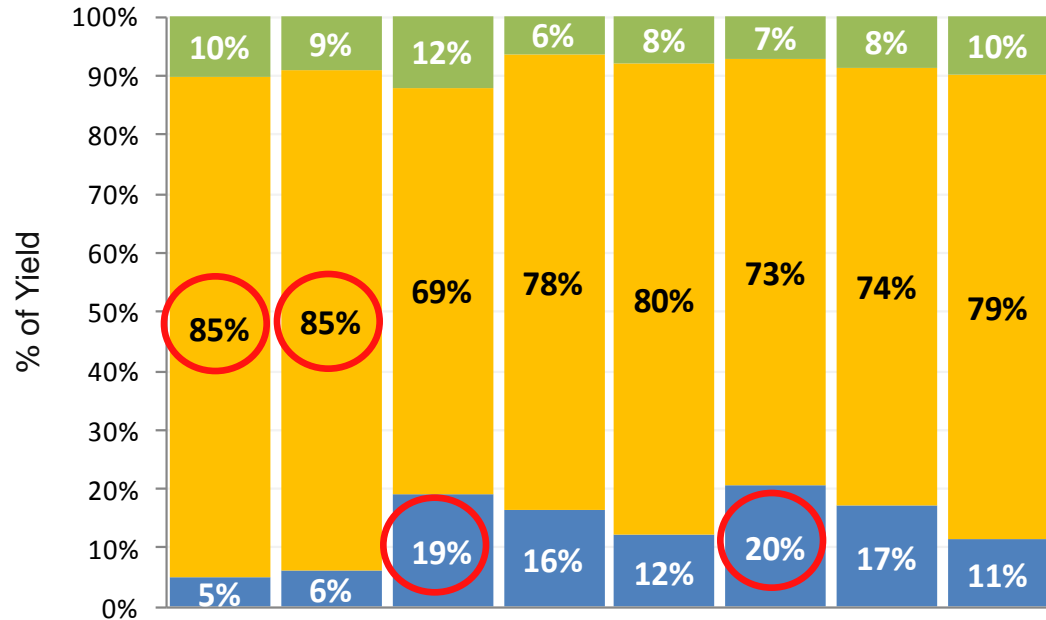
## *Weekly yield and percent by mode*

# Week 1 Yield

This week is mostly Online respondents

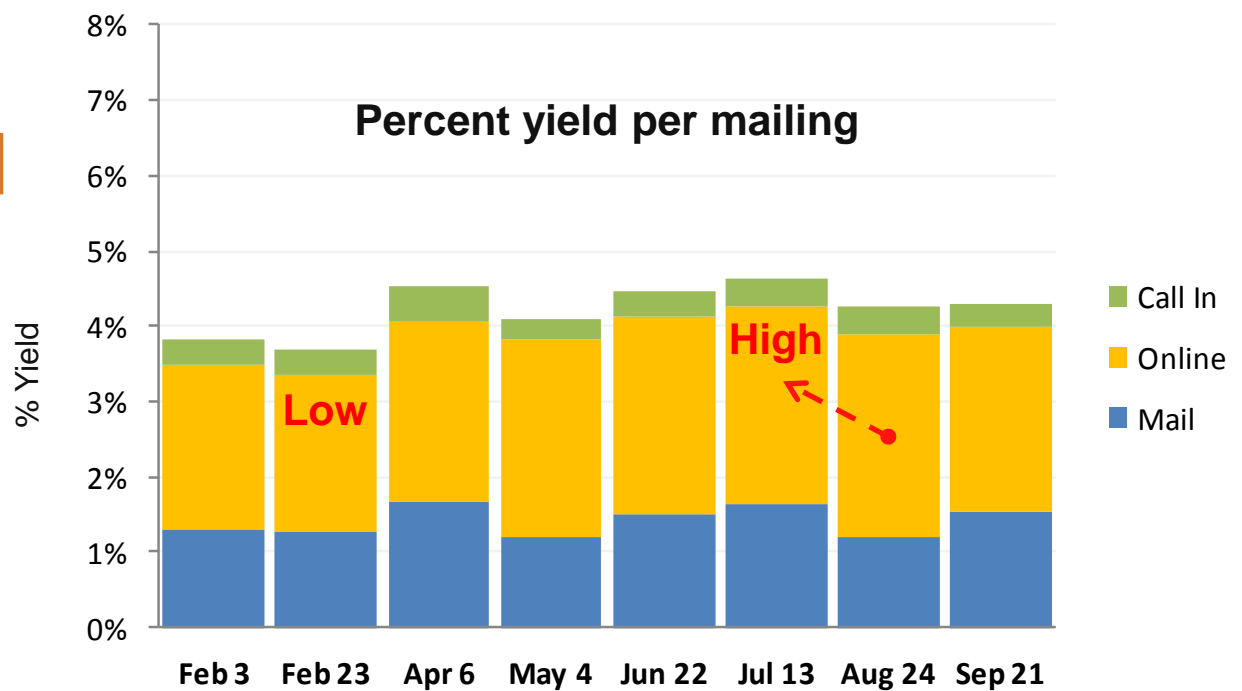


Percent of yield per mailing

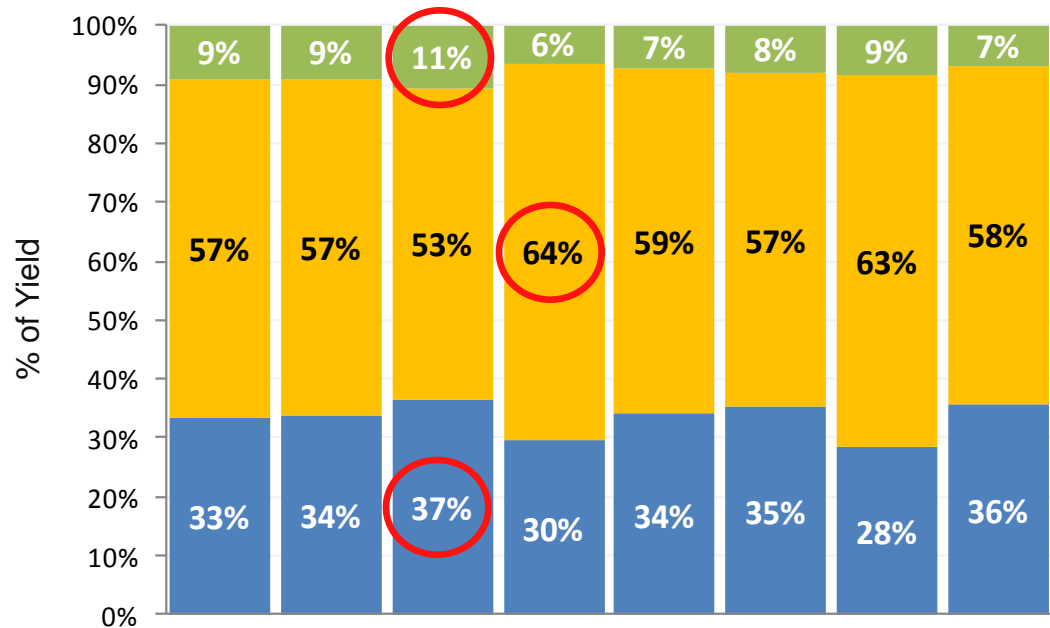


# Week 2 Yield

This week Mail returns kick in



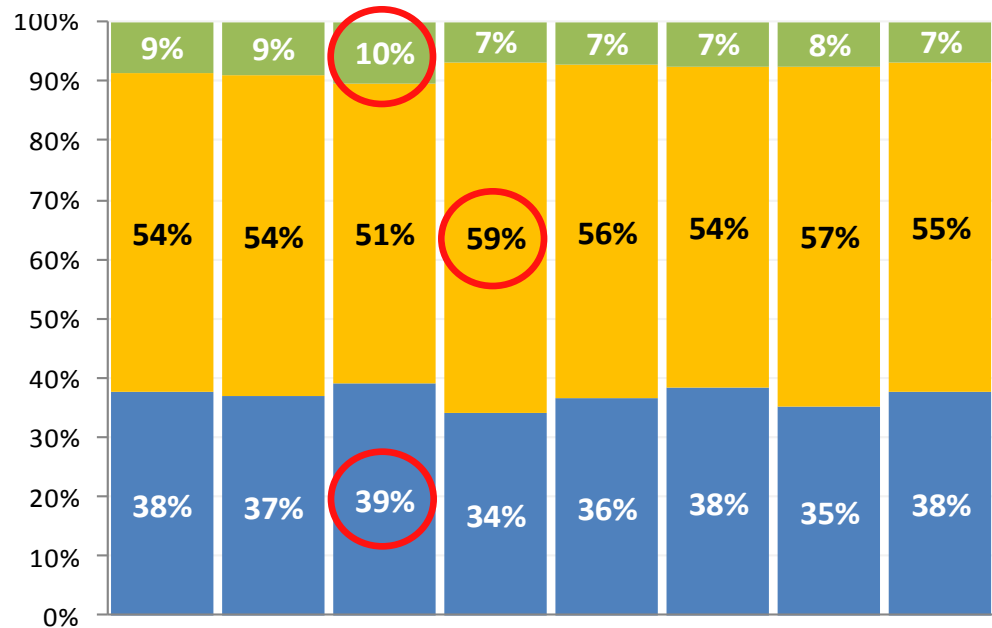
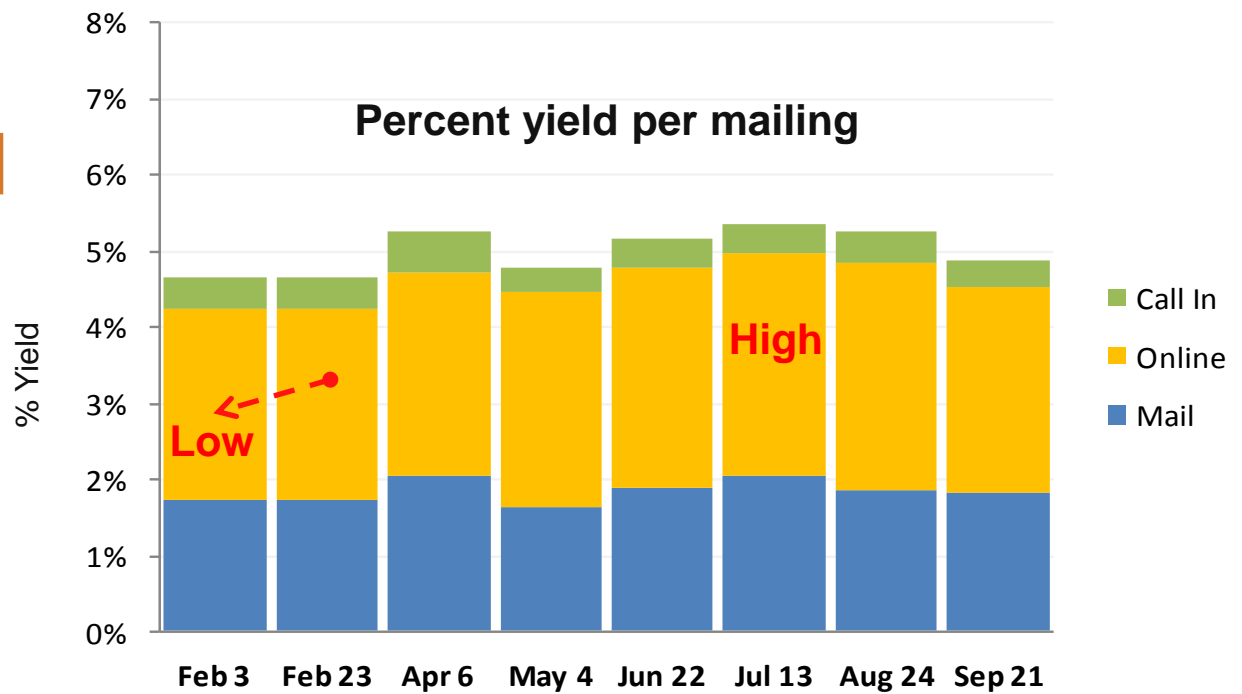
Percent of yield per mailing



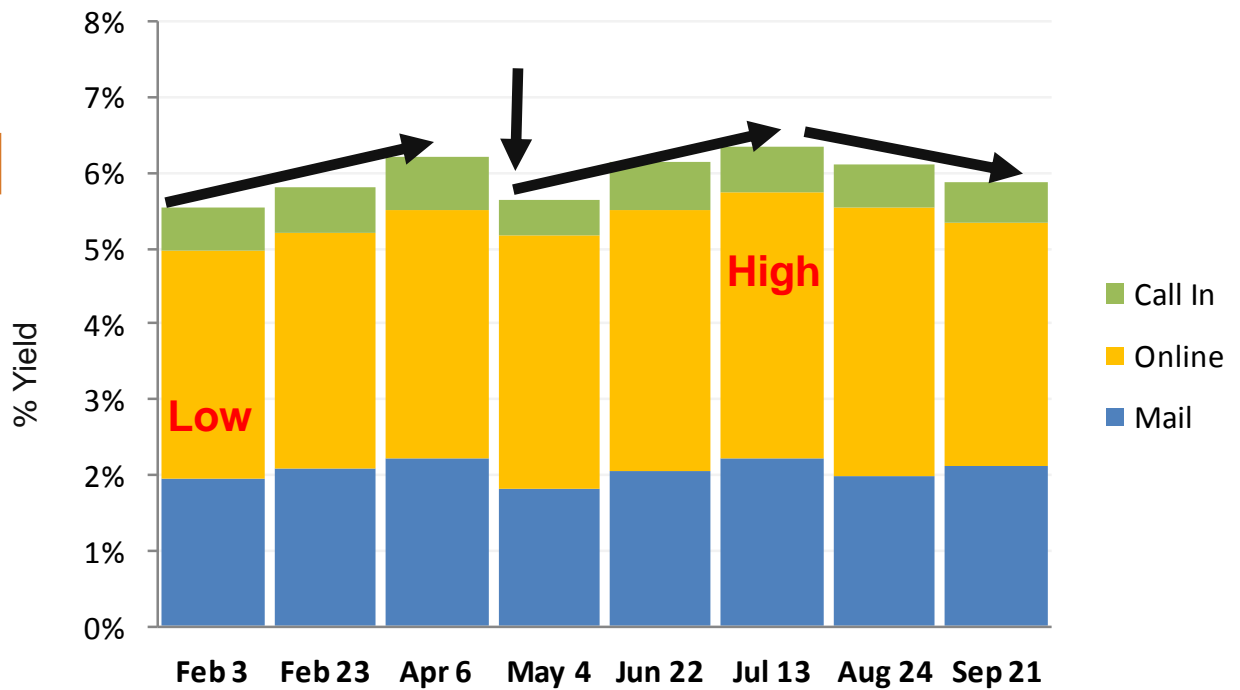
# Week 3 Yield

More mail returns,  
Online and Call In  
fairly same as  
earlier

Percent of  
yield per  
mailing

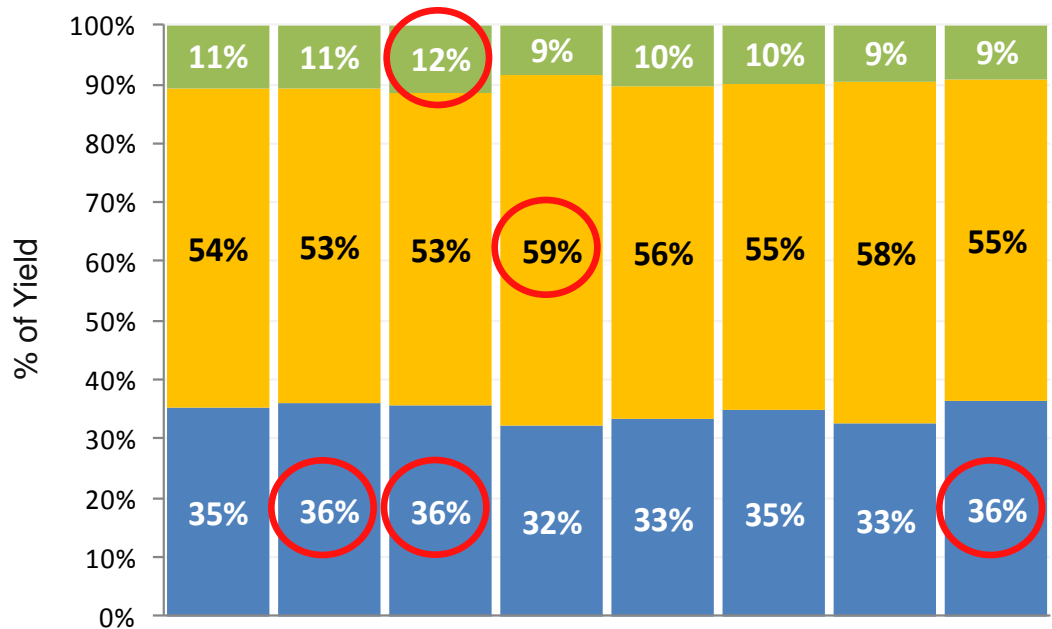


# Week 4 Yield



Call-Ins pick up slightly, Online and Mail fairly same as earlier

Percent of yield per mailing

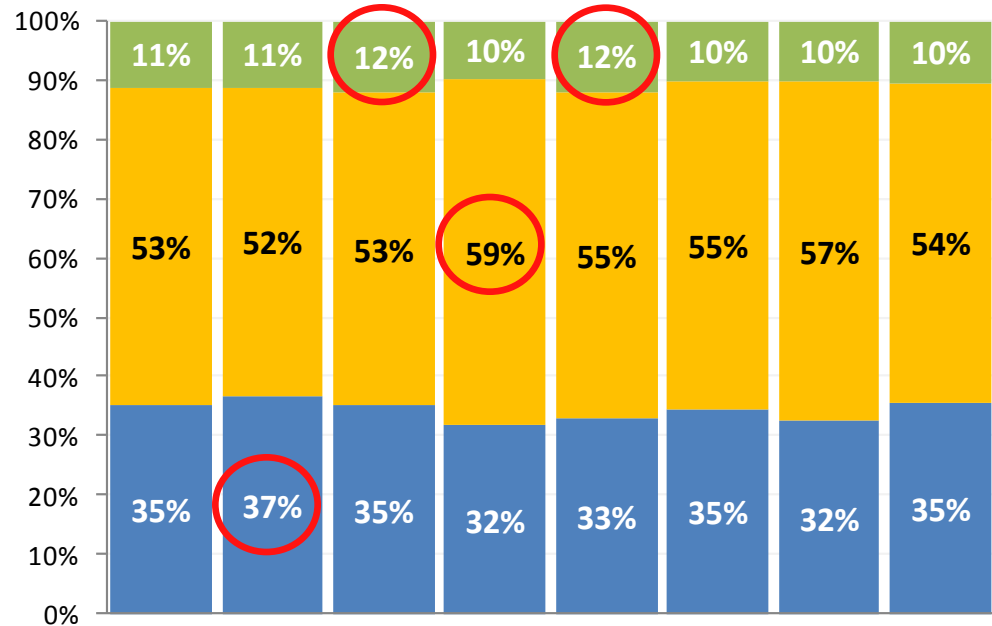
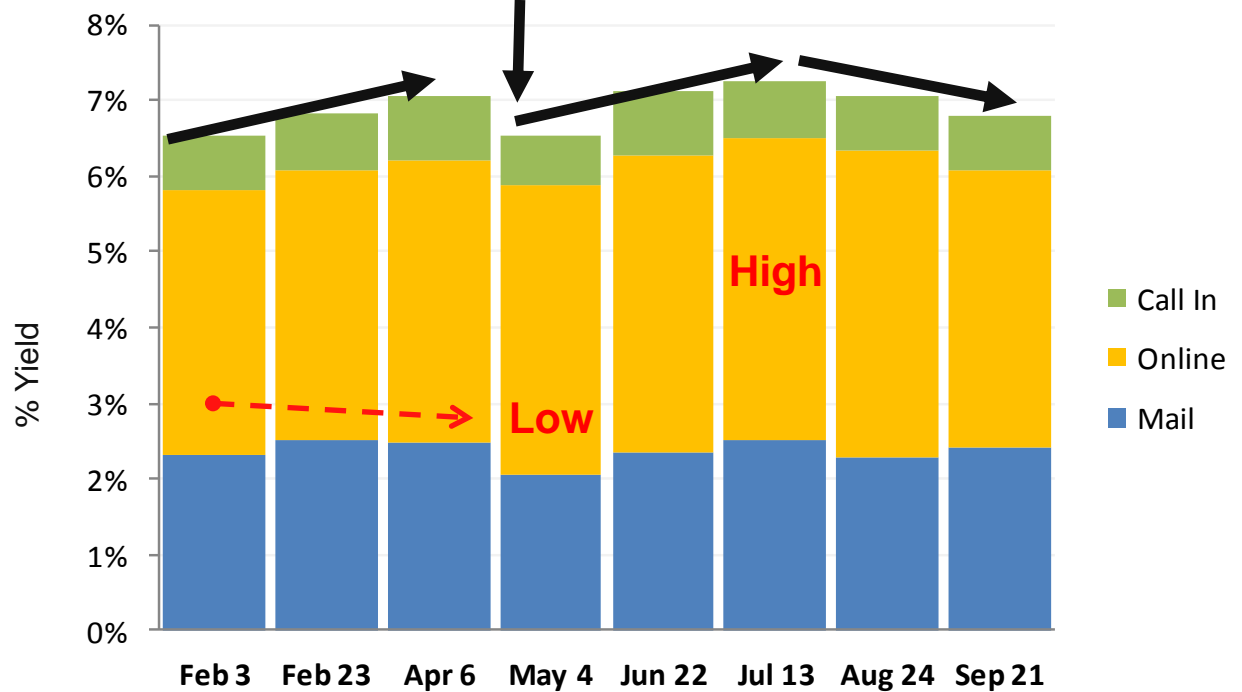


# Final Yield

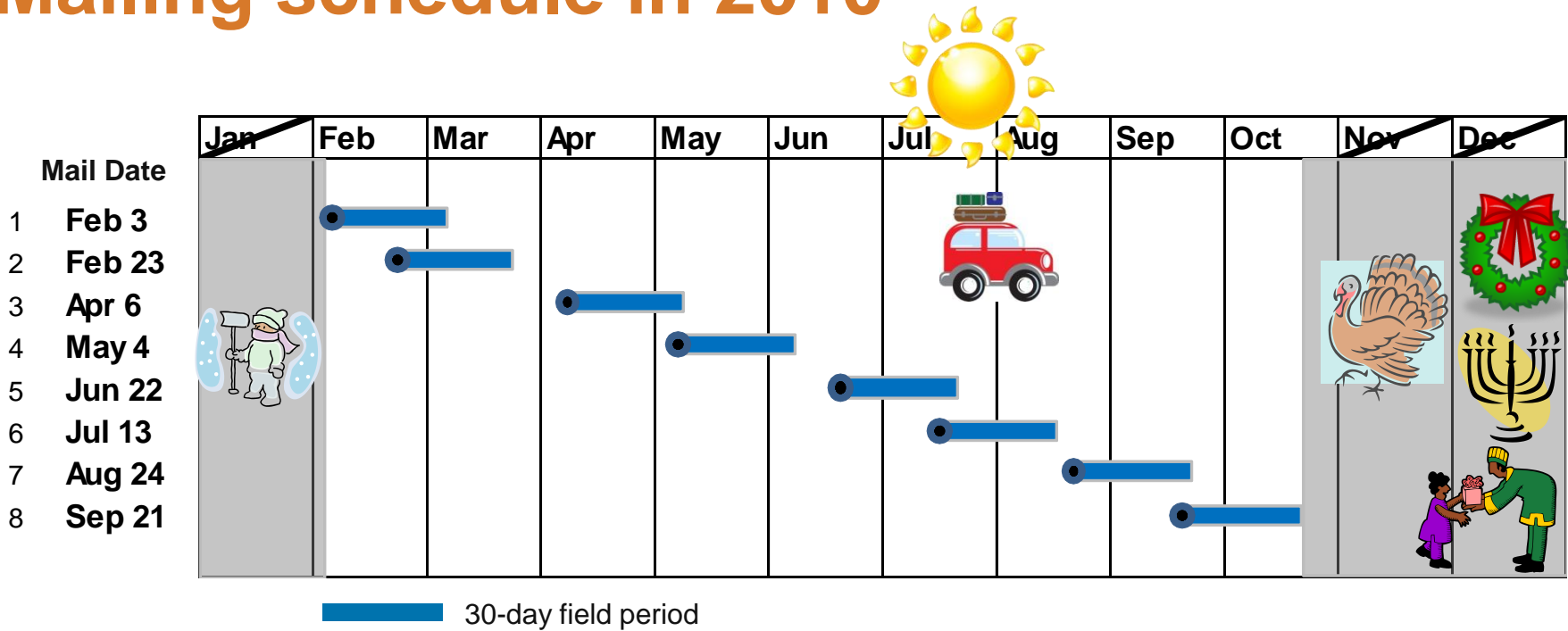
(12 weeks)

Some more Mail and Call-Ins, Online fairly same as earlier

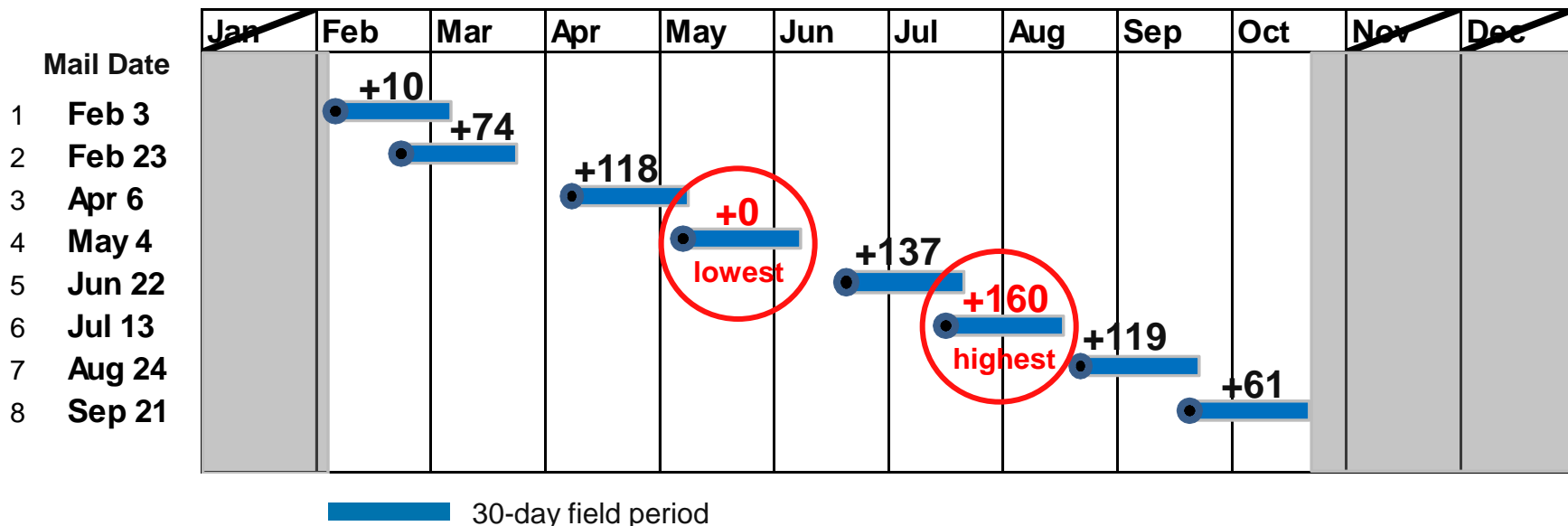
Percent of yield per mailing



# Mailing schedule in 2010



# Additional returns above lowest yield (May)



Compared to average yield:

May is significantly lower, July is significantly higher

Other differences = *ns*\*

\* Exact formula method for proportions <0.30 was used. See Fleiss, JL, Levin, B, Myunghee, CP. Statistical Methods for Rates and Proportions, 3<sup>rd</sup> ed., 2003

# Conclusions

- Variations in absolute yield in mail surveys should be expected depending on time of year mailed
- Although intriguing patterns were observed, most differences in % yield were not significant from average % yield
- The May 4 mailing yielded a significant lower response
- The July 13 mailing yielded a significant higher response
- A seasonal effect is “mildly” suggested but data from additional years are necessary to draw a more firm conclusion.

**Thank you!**

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