Comparison of Three Strategies to Enroll Cancer Survivors in a Lifestyle Program Offered by a Cancer Registry

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Background

• **Goal of Overall Study:** Determine if cancer registries could take an active role in enhancing health of cancer survivors and their relatives.

• **Initial plan** was to focus on **increasing cancer screening among younger breast and colorectal cancer survivors who may be at higher risk of developing an initial or second cancer in the future.**

• **Phase 1** was a mailed survey to assess cancer screening rates and levels of health behaviors among breast and colorectal cancer cases diagnosed <50 between 1999-2009.
Background

• Phase 1 data showed high adherence rates to recommended cancer screening: 88% for breast, and 84% for colorectal cases.

• Thus an intervention to increase cancer screening did not seem critical. But, health behaviors were in need of improvement.
  – Over half would be considered overweight or obese.
  – Physical activity levels were below US recommendations.
  – Consumption of fruits and vegetables was low and they averaged consumption of 2 sugar sweetened beverages/day.
Background

• Type of intervention was based on respondent preference.
  – Respondents expressed interest in getting information to stay fit
  – Preferred interventions using written materials, websites and email.

• Therefore Phase 2 was re-designed to target health behaviors.

• Our goal was to test different methods of recruitment and we used an existing evidence-based program shown to be effective in improving diet and physical activity.
Alive! Program
A Lifestyle Intervention via Email

• Created by Berkeley Analytics, Inc. (Nutrition Quest)
• Participant takes an online baseline survey to determine areas of interest/need
  – Instant feedback about their health is provided
  – Participant then chooses an area of focus
    • Increase physical activity
    • Increase fruit or vegetable intake
    • Decrease saturated fat/added sugars
• 12 week personalized program with email instructions/reminders
• Final survey about the experience
Methods-LiveWell Study

• **Selected** 4,446 breast and colorectal cancer survivors diagnosed <50 between 1999-2009 in Los Angeles County

• **Randomized** them into three groups using year of diagnosis, cancer site, age group, race/ethnicity.

• **Mailed** all selected participants an introductory letter with individual password, study brochure, cancer registry brochure, and information sheet.

• **Tested 3 methods of follow-up** to compare recruitment
  – Follow-Up Letter mailed after 2 weeks
  – Follow-Up Telephone call after 2 weeks (provided additional information)
  – No Follow-Up after initial letter

• **No tracing** done to locate lost cases, 3 calls attempted
Methods

• Respondents were first requested to log on to a USC developed web site and answer 3 eligibility questions. If eligible, then they were directed to the Alive! website to begin the program.
  – age >18
  – no longer receiving cancer treatment
  – spoke English

• [https://uscnorriscancer.usc.edu/LiveWell](https://uscnorriscancer.usc.edu/LiveWell)

• Especially poor response (among all three options) after follow-up necessitated a second mailing to all three groups.
  – First mailing was in November, 2013.
  – Second mailing was in January, 2014
## Results-Randomization

<table>
<thead>
<tr>
<th></th>
<th>Follow-Up Call</th>
<th>Follow-up Letter</th>
<th>No Follow-up</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
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<td>1485</td>
<td>1476</td>
<td>4446</td>
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<tr>
<td>NHW</td>
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<td>693</td>
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<td>2064</td>
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<tr>
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<td>Hispanic</td>
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<tr>
<td>Chinese</td>
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<tr>
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<td>Korean</td>
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<td>48</td>
<td>104</td>
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### Results - Randomization

<table>
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<th>Follow-Up Call</th>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt;35</td>
</tr>
</tbody>
</table>
Results

- Demonstration of successful randomization
- Response by patient characteristics
- Difference by group
- Other information obtained from phone follow-up group
Frequency of Other variables (all ns by group)

- **Cancer Site:**
  - 3683 Breast,
  - 763 Colorectal

- **Socioeconomic Status:**
  - 782 High
  - 729 Above Average
  - 607 Average
  - 500 Below Average
  - 370 Low

- **Dx Year**
  - 438 1999
  - 912 2000-01
  - 914 2002-03
  - 730 2004-05
  - 745 2006-07
  - 707 2008-09
Response

Percent Participating by Group (p=0.01)

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent Participating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5.9</td>
</tr>
<tr>
<td>Follow-Up Letter</td>
<td>6.7</td>
</tr>
<tr>
<td>Follow-Up Call</td>
<td>6.6</td>
</tr>
<tr>
<td>No Follow-Up</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Response by Characteristics

• Variables significantly related to overall response:
  – **Race/ethnicity** (NHW and Japanese higher)
  – **SES**-Higher response with higher SES
  – **Tumor grade**
    • -Higher response among well differentiated
  – **Sex**-Higher response among females
Response by Characteristics

Percent Participating by SES*

<table>
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<th>SES</th>
<th>Participation Rate</th>
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<tr>
<td>High</td>
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<tr>
<td>Above Ave.</td>
<td>7.3</td>
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<tr>
<td>Average</td>
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<tr>
<td>Below Ave.</td>
<td>3.4</td>
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<tr>
<td>Low</td>
<td>1.6</td>
</tr>
<tr>
<td>Total</td>
<td>5.5</td>
</tr>
</tbody>
</table>
Percent Response by SES by Group

- High SES: Total, Follow-up Call, Follow-up Letter, No follow-up
- Above Ave.: Total, Follow-up Call, Follow-up Letter, No follow-up
- Average SES: Total, Follow-up Call, Follow-up Letter, No follow-up
- Below Ave.: Total, Follow-up Call, Follow-up Letter, No follow-up
- Low SES: Total, Follow-up Call, Follow-up Letter, No follow-up
Additional Information from Phone Follow-Up

• Participated=6.6%
• Expressed interest=6.8%
• Contacted, not interested=11.0% (n=164)
  – No English=61
  – Other=54
  – Too busy=20
  – Already had good behavior=12
  – No internet access=12
  – Too sick=5

• Not reached=75.5%
Conclusions

• Pilot experiment on expanding role of cancer registry in impacting health of cancer survivors

• Second letter mailing was as effective as a phone call in improving response. Lower cost follow-up effective.

• Timing of letters was important. More motivated to participate after the new year.

• More potentially interested (based on phone follow-up)

• Problem identified: USC participation Web site needed to be linked to SEARCH engines (some may not have been successful at logging on).
Conclusions

• Additional analyses to be done
  – Actual experience and impact of the Alive! program on those that did participate.
  – Cost/Benefit analysis (Registry costs included paper, staff time for selection of cases and mailings, database development, postage, obtaining IRB approval, printing of brochures, Alive! program costs paid by grant)
  – Implications of 6% participation rate.
  – Potential impact on cancer survivors (attributable risk)