1. Breast cancer funding (from the N.C.I.) per death eclipses that of any other cancer: Lung cancer receives less than one-eighth of the funding per death while also having a mortality rate nearly eight times that of breast cancer (over five years) [15, 13].

2. While the national incidence of breast cancer is the second highest among all cancer types (with 10,000 more new cases per year than the next leading cancer), the N.C.I. funding per new case for breast cancer is more than $1,000 greater than the funding per new case of lung cancer [15, 23].

3. Four major cancer charities (advertised as supporting breast cancer patients and children with cancer) were found to have stolen $187M, despite having been well-known as highly ineffective charitable institutions (only 3 cents of every dollar went to cancer-related expenses) [3, 7].

Diseased Charity:
Examining the inconsistencies between cancer incidence, mortality rates, and charitable funding.

On May 19, 2015, the FTC announced that it, along with all fifty state governments and the District of Columbia, had charged four cancer charities with defrauding consumers of more than 187 million dollars [3]. Nearly 40% of the $187M was "raised" by the Breast Cancer Society (BCS), an Arizona-based intermediary between fundraising event agencies and donors (an absurd 90% of donations went to compensation and fundraising costs) masquerading as a charity. A few days after the FTC made its announcement, BCS terminated all operations; since its inception in 2008, it had spent less than 1% of donations on direct financial assistance for cancer patients. At the time, it was one of Arizona’s largest non-profit-organizations [5]. A question is immediately raised, given the facts of BCS’s fraudulent behavior: How did the public
continue funding the organization? The answer lies in a simple, albeit disheartening, concept: health-related charities are not funded based on logic. The case of BCS exemplifies the lack of statistical rationale exhibited towards charitable organizations, especially in the context of breast cancer funding.

Breast cancer is one of most heavily publicized diseases in modern medicine. It affects 3 million people every year in the United States, and is a preeminent force in women’s healthcare (the American Cancer Society (ACS) suggests yearly mammograms for women over 40, which would cost $10 billion to implement [20]). The entire month of October is dedicated to breast cancer awareness [12], despite the prevalence and lethality of other less-publicized diseases. In 2006, the National Cancer Institute (NCI) released data covering its funding of research on a per-new case and per-death basis [15] (below).

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Deaths</th>
<th>$/Death</th>
<th>New Cases</th>
<th>$/New Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>162,460</td>
<td>$1,630</td>
<td>174,470</td>
<td>$1,518</td>
</tr>
<tr>
<td>Pancreas</td>
<td>32,300</td>
<td>$2,297</td>
<td>33,730</td>
<td>$2,200</td>
</tr>
<tr>
<td>Colon</td>
<td>55,170</td>
<td>$4,566</td>
<td>106,680</td>
<td>$2,361</td>
</tr>
<tr>
<td>Prostate</td>
<td>27,350</td>
<td>$11,298</td>
<td>234,460</td>
<td>$1,318</td>
</tr>
<tr>
<td>Breast</td>
<td>41,430</td>
<td>$13,452</td>
<td>214,640</td>
<td>$2,596</td>
</tr>
</tbody>
</table>

From this data it is apparent that lung cancer, despite causing more deaths than any of the other top five cancers combined, is worst-off – it ranks last in per-death and second to last in per-new case funding from the NCI. Breast cancer, however, ranks first in both categories although it kills less people than lung or colon cancer. This data alone is not conclusive: it does not provide the incidence or survival rates of the cancers. The United States Cancer Statistics (USCS) Working Group compiled the top 10 cancers by incidence (per 100,000) from 2008 to 2012 [23], and the National Program of Cancer Registries (NPCR) compiled five-year relative survival rates (percentage) of the same cancers from 2001 to 2011 [13] (next page).
Rates in incidence per 100,000 people (in the U.S.).

<table>
<thead>
<tr>
<th></th>
<th>Prostate</th>
<th>Breast</th>
<th>Lung/Bronchus</th>
<th>Colorectal</th>
<th>Uterine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>131.8</td>
<td>123.1</td>
<td>63.7</td>
<td>41.9</td>
<td>25.4</td>
</tr>
<tr>
<td>Survival</td>
<td>97.4%</td>
<td>88.4%</td>
<td>17.8%</td>
<td>63.5%</td>
<td>80.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Bladder</th>
<th>Melanoma</th>
<th>Lymphoma</th>
<th>Kidney</th>
<th>Thyroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>20.8</td>
<td>19.9</td>
<td>19.2</td>
<td>16.0</td>
<td>13.6</td>
</tr>
<tr>
<td>Survival</td>
<td>75.0%</td>
<td>89.0%</td>
<td>67.1%</td>
<td>70.4%</td>
<td>96.5%</td>
</tr>
</tbody>
</table>

A more complete understanding of the data is revealing; breast cancer is both well-funded and highly survivable while other, more deadly (albeit less common), cancer types receive substantially less support. Lung cancer, while affecting half as many people yet killing in excess of 100,000 more people per year, receives only a fraction of the funding that breast cancer enjoys. Moreover, extremely fatal cancer types such as pancreatic cancer, which sports a 7.7% survival rate over 5 years [13], receive very little public attention and sponsorship.

Regarding a topic as emotional as cancer, one must tread lightly while questioning the motives governing generosity to charities. However, the enormous discrepancy between funding for breast cancer and other cancer types is statistically significant beyond the relative prevalence of breast cancer; in 2012 the most frequently occurring cancer (prostate) received less than half of the total funding as breast cancer.

One explanation for such an incongruity comes from political posturing and lobbyist-politician relationships. In 1992, government breast cancer funding effectively doubled after Senator Tom Harkin (D-IA), who lost two sisters to breast cancer, and the Breast Cancer Coalition worked to reappropriate $300M from the Defense Department to the NCI. After Harkin’s motion failed in Congress, he “hit upon an ingenious device:” adding $210M to the existing biomedical funding in the defense budget as part of a new breast cancer research program. With nearly a quarter-billion dollars in new funding, the Army floundered in deciding where to assign their newfound budget [8]. One member of the NCI’s Cancer Advisory Board compared the situation to ”asking
NIH to build tanks or helicopters;” a ludicrous concept which beautifully illustrates the disconnect between politics and science.

Scientists and charitable organizations agree that the war against breast cancer, much less any type of cancer, is far from over. A 2008 study detailing the progress to be made to bring breast cancer treatment to a desirable level amounted to 25 pages and seven recommended items, including improved understanding of genetics, new therapies utilizing the immune system, and early (or earlier) identification protocols [22]. Of course, such improvements cannot be made without sufficient funding.

Harkin’s quest for increased government funding for breast-cancer specific research and ultimate blunder – appropriating a massive quantity of money with no real plan for its use – demonstrates the lack of insight in politicians attempting to budget for medical research: the average Congressperson does not have the medical knowledge of a research oncologist and cannot be expected to make informed decisions when dealing with such a specialized field. The 2008 study, regardless of intent, illustrates a larger concept: every type of cancer, even the most well-funded by both government and charitable agencies, needs more funding. Ideally, the proportions between each type of cancer would correspond to incidence and mortality rates.

The reality is that breast cancer funding is influenced by factors outside of logic, and consumers donate based on their emotion and personal experience: the revelation that BCS had stolen such a tremendous percentage of their donations was seemingly more shocking in light of a 2013 investigative report by the Tampa Bay Times which extensively detailed the suspicious financial activity of BCS. Disturbingly, it came as no surprise to individuals with an understanding of the motivations driving charitable donations that consumers would continue to donate to BCS for two years after the initial public report describing it as one of ”America’s Worst Charities” [7].

Rather than legitimate concern for disease burdens, three major and related factors inform the public on charitable donations (especially with respect to cancer funding): personal understanding, donation contribution to donor image, and public
Public scrutiny is easiest to understand – in 2014, breast cancer received nearly as many "media mentions" (stories on a certain type of cancer from the New York Times, Washington Post, Chicago Tribune, and CNN News) as the other nine most common cancers combined. The public scrutiny surrounding breast cancer can be attributed to a cultural obsession with breasts and prevalence of the disease, which causes more frequent interactions with patients in day-to-day life.

Personal understanding pertains to the donor’s own perception of whatever cause he or she might be considering; breast cancer, by virtue of being extremely prevalent and also having a comparably excellent prognosis, has many survivors. So many surviving patients leads to (as with the high incidence of the disease) increased knowledge of the disease. Few pancreatic and lung cancer patients (sporting a combined 5-year survival rate of 25.5%) survive to raise awareness for their own cause – a tragedy most breast cancer patients do not confront.

Donation contribution to donor image describes the always-expanding relationship between our virtual and physical lives: More often than ever, research funding competes in a popularity contest with little relation to the incidence or mortality of each disease, and donations are chosen based on the potential to make a statement (often through social media or viral internet content) instead of the potential to improve as many lives as is possible.

These three factors dually collaborate with and combat against one another when a donor selects the recipient(s) of their charitable contribution. Hard data illustrates the disproportionate funding of breast cancer, which can be attributed to both governmental and social missteps; politicians can impose their will on subjects outside of their expertise and humans are often left at the mercy of their emotions, blinded to logical outcomes. The BCS scandal served as a brief reminder to donate cautiously by taking measures against fraudulent charities (researching the organization before donating and comparing to other charities for the same cause). It does not,
however, aid in choosing a truly helpful charity: in 2013, the Susan G. Komen foundation (the largest breast cancer charity in the world) faced criticisms for eliminating funding for breast-cancer screenings while applying a 64% raise to the CEO’s salary [11]. Since the Susan G. Komen foundation was founded in 1988, it has raised over $2 billion for breast cancer research. In that time, the number of deaths per 100,000 has decreased by just over ten. In the same amount of time, pancreatic cancer deaths per 100,000 cases has increased [21].

This is not to say that relative funding has no correlation to improving mortality rates. Rather, medical research funding is imperative to improving the prognosis of those beset with a potentially terminal illness [14]. In the case of the Susan G. Komen foundation (and similarly large charities), issues arise when overhead and other administrative expenses overwhelm the proportion of money dedicated to research, screening, and treatment (RST) costs; in 2011, the Susan G. Komen foundation reduced the percentage of funding allocated for research from 17% to 15%, bringing their RST expense to less than 33% of their total budget (although their raw monetary contributions still dwarf other private charities like the ACS) [1]. Overseas, medical research funding stands to substantially increase in coming years due to an imminent Australian-government-sponsored $20B fund announced in the 2014 budget [6]. If the United States government emulated this approach ($20B AUD is $14B USD, just under half of the entire NIH budget [19]), the ineffectual donor-discretion system might be circumvented. Until then, the burden falls on donors to focus on the facts instead of the façade to create an improved outlook on cancer-related charitable funding.
References


