

Penicillin Exhibit
Front-end Visitor Survey
Report

For the Brooklyn Historical Society

Serrell & Associates
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Penicillin Exhibit Visitor Survey Report

Introduction

The Brooklyn Historical Society is planning a new exhibit that will focus on the development of penicillin in Brooklyn. In order to get information about potential visitors' knowledge of and interest in the topic, a survey of 40 people was conducted. The exhibit team's desire was to find out how much people know about penicillin; what they want to know about it, and what their misconceptions might be.

A summary of the survey methods, data collected, and the implications for shaping the exhibit's development are reported here.

Methods

The survey was conducted as a five-minute, face-to-face interview in the first floor gallery of the Brooklyn Historical Society (BHS) during March 1993. Interviewers were members of the exhibit team, trained by the evaluator, Beverly Serrell.

Questions on the survey form (see sample attached) were designed to gather the following data: demographics (such as age, residence); psychographics (interest, prior knowledge); and information about what visitors might expect to learn about, see, do and feel in the penicillin exhibit. Visitors were told the title of the exhibit, "Manufacturing a Miracle: Brooklyn and the Story of Penicillin," and they answered the open-ended questions based on their own expectations, imagination, prior knowledge and experience.

Because the schedule was tight and visitation to BHS was light during March, the on-site interviews with actual visitors (n=30) were supplemented with 10 more interviews conducted by the evaluator off-site (including friends, business associates, a cab driver, and seat-mate on the airplane flight from NYC to Chicago).

Due to the open-endedness of the questions and responses, survey data were reviewed and summarized in a qualitative manner. Comments were lumped into categories of similar responses, revealing trends, rather than exact percentages, which

are qualitatively reported here as:

- “Most” means that 21 or more of the 40 people surveyed had a similar response or comment.
- “Many” means 6 to 20 people made the comment.
- “Several” means the comment was made 4 or 5 times.
- “A few” indicates 2 or 3 comments of a particular category.

For this type of open-ended format, with a sample size of 40, it was considered “significant” by this evaluator if the same comment was made independently by three visitors. Individual comments (e.g., made by one person only) that have special relevance to the exhibit team’s goals are also considered useful and important. Relevance of the responses to the exhibit plans are discussed after the next section.

Results

The ages, residences, and special interests of the survey participants are summarized on the next page.

What did people know about penicillin?

Most survey participants seemed to know what penicillin was: a drug that cured some diseases. Many knew that it came from a mold, fungus, plant or natural source. Most people did not know that penicillin was manufactured in Brooklyn, although several people knew of the Pfizer Company.

A few respondents knew about the following: penicillin’s importance in World War II; its impact on syphilis; how it replaced sulfa drugs; that penicillin fights bacteria but not viruses; and that it was over-used at one time.

Several people had personal, dramatic connections with the drug, such as being cured of a disease, or having a close relative who was cured. Several people were concerned about allergic reactions to penicillin. One person remarked, “It could cure quickly and it could kill quickly.”

Penicillin Survey Demographic Data Summary

Total number of participants in survey = 40

Number of participants at BHS = 30

First time visitors = 17 (57%)

Repeat visitors = 13 (43%)

Number of participants interviewed off-site = 10

Residence of total sample:

From Brooklyn = 24

Neighborhoods:

Park Slope (7)

Bay Ridge (4)

Mill Basin (2)

Brooklyn Heights (2)

Crown Heights (3)

one each from--

Clinton Hill, Flatbush, B. Beach, Coney Isl., Greenpoint,
and Sunset Park.

From elsewhere = 16

Manhattan (4)

Chicago (4)

Michigan (2)

Long Island (2)

one each from--

Durham, Harrison, New Jersey, and Cleveland.

Ages of participants:

1 teen

6 20s

10 30s

9 40s

3 50s

6 60s

5 70s

Special interest in history of science:

None = 68% (27 of 40)

"yes" included interest/training
in botany, psychology,
engineering, archaeology,
social science, college
courses, and personal interest.

Was the amount of knowledge about penicillin related to how old they were?

Not apparently. Of the several people whose answers were very limited, a range of ages was represented. People who knew detailed information about penicillin also spanned a range of years. Older visitors were more likely to have a personal connection with the drama of the drug's new impact.

What did visitors expect to learn about in the new exhibit?

Most people mentioned finding out about Brooklyn's connection to the story of penicillin. Many mentioned the history of penicillin's development, use and who discovered it and how. How penicillin was manufactured, produced, produced in large quantities was mentioned by several people.

A few survey respondents commented that they expected to learn about other antibiotics and the synthesis of related drugs; the role of the people involved in the production of penicillin; the role of industry and the government; and its impact on health care, or the social context. Two people specifically mentioned that they do not take penicillin any more and are relying on more holistic alternatives to prescription drugs.

Several people mentioned that they thought it was a good idea to have this exhibit because penicillin is "something we take for granted."

What did people expect to see in the new exhibit?

This question relied on visitors to use their imaginations to visualize the new exhibit, and they were remarkably creative with their answers.

Many people mentioned expecting to see laboratory, medical, or hospital equipment, such as petri dishes, Bunsen burner, mold growing or cultures, pills and bottles, or the forms of penicillin given.

Many people mentioned that they expected to see photographs of the people who discovered, developed or manufactured it, or of the people who were sick and cured. Newspaper articles, advertisements, testimonials were mentioned by a few people.

Several people expected to see lists, statistics, or the chronology of infections or diseases that penicillin conquered as it was developed. "What life was like without it" was mentioned by a several people.

Several people expected to see the impact of the industry in Brooklyn--how it affected the growth of the suburb, the laborers, expansion of the plant, and where it took place.

Many of the "expect to see" responses, such as what penicillin is and how it works, or who discovered it, could be lumped under the category of "learn about" as well.

What did they expect to do?

Visitors were less sure how to answer the question about what they would expect to do in the exhibit (besides read and look). Many people said "don't know," "not sure," or didn't answer. One visitor said "Surprise me!" A few others had humorous responses, such as, "Get a piece of moldy bread" and "Get a free sample?" Several people mentioned the possibility of interactives or hands-on experiences in general. One person suggested that a follow-up activity could be to go to the manufacturing site. Another suggested making a bibliography list of reading available to take home.

Several people mentioned looking through a microscope to see penicillin. A few expected to watch a movie or video, or touch something, or play a question and answer game. One person said, "Be in a person's shoes who's life was saved."

How did survey respondents expect the exhibit might make them feel?

Many people did not respond to this question, but those who did used an emotionally rich vocabulary to express their expected exhibit experiences of the topic: feelings of pride, fascination, sadness, anger, luck, awe, appreciation, curiosity and boredom or indifference were mentioned.

Many respondents said that they would feel pride in Brooklyn for being important in the story of penicillin.

Many said they expected to feel more knowledgeable and interested. "More confident about what I know about penicillin," was the way one person put it.

A few stronger emotions about penicillin were evidenced by these comments: "I'd feel very emotional because it saved my dad's life." "Sad, because of the people who have suffered illness." "Anger--I wish they knew then what we know now about preventative methods." "Appreciation for how penicillin has improved the quality of peoples lives." "Fascinated and intrigued by scientific adventure and the scientific method." "Hopeful for future cures (such as AIDS)."

A few people expected to be bored or indifferent, yet they said they still could be open-minded or surprised. "Make it not boring, but not too technical." A fear of scientific information was evidenced by a few people who specifically mentioned that they were not interested in science. "Science is not my thing."

A few people remarked that it was an unusual exhibit for the BHS. "I'd expect to see it at the natural history museum." "Is there an anniversary (for penicillin) coming up?" "It's kind of an odd exhibit, actually."

Questions Asked People had many questions about penicillin:

Is it a fungus on cheese?

What is the raw product?

What problems made for the need?

Does it work on viruses?

Is it a sulfa drug?

Was it discovered at Pfizer?

Was it Madame Curie and her husband who discovered it?

Were the laborers (at Pfizer) scientists?

What did Pfizer do with the money they made from penicillin?

What improvements have been made in it?

Do they have a synthetic now?

Do they still grow it?

How do you know if you are allergic?

Only a few misconceptions were evidenced in comments that it was invented (rather than discovered and developed); that it takes an electron microscope to see it; and that it's related to the Salk vaccine. A lack of knowledge was more prevalent in their comments than misinformation.

Interpretations and Implications for Exhibit Planning and Design

This front-end evaluation provides specific information about what visitors expected from the new exhibit. By meeting visitors' expectations, this exhibit can successfully achieve the following three "levels" of appeal:

- Satisfy their curiosity.
- Direct information and experiences at them personally.
- Take them beyond their expectations

The way visitors phrased their questions and the vocabulary they used to express what they expected to learn about, do, see and feel in the exhibit can be directly applied to the label language used in the exhibit. For example, the theme of "Health and medicine prior to penicillin" could be titled "What life was like without penicillin." Unfamiliar terms or references should be avoided, such as "yellow magic," since most visitors are not acquainted with how penicillin looks or where the drug actually comes from. Many visitors do know of its association with mold, so "moldy magic" would make more sense to them.

Based on the feedback from this survey, it seems that most visitors will probably be more interested in themes of changing attitudes towards illness and medicine, ethics and allocation, and life and death stories than in corporate image-making or other examples of scientific research. The penicillin story's military connection with World War II, if told simply and clearly, will be one of the "surprises" for most visitors, since few visitors have this prior knowledge.

The theme about the role of the media and advertising could be tied to the over-use and abuse part of the penicillin story in a way that would be appealing. The important difference between discovery and manufacturing--and the timing and demand for penicillin--in this story will probably be easily comprehended by

visitors, taking them beyond their expectations of simply learning about who discovered it and how.

One of the most personal connections for all visitors is the issue of allergic reactions. An interactive exhibit element would work well to engage and involve visitors in learning more about who is allergic, how to tell, what happens, and what the alternatives are. Other themes planned for the exhibit could be woven into this activity, such as how penicillin works and what it is.

In this March 1993 survey, the majority of the sample lived in Brooklyn. Summer visitors are likely to represent a wider variety of residences, although Brooklynites will probably always be a significant proportion of the audience. The exhibit should strive to reinforce these visitors' feelings of pride in Brooklyn for being important in the penicillin story, as well as provide an obvious rationale for having the exhibit at BHS. Most visitors will be curious to know about the Brooklyn connection, regardless of where they live.

Older visitors (e.g., 50s, 60s, 70s) represented a large proportion of the audience surveyed at BHS. They are more likely to have had a personal connection with penicillin when it was new and the impact was dramatic. Younger visitors (e.g., 20s, 30s, and 40s) and older people can equally relate to the notion that "miracle drugs" are few and far between. Both audiences would be interested in what life was like before penicillin.

One survey respondent provided a personal testimony that could be used in the exhibit: "I was two or three years old and my father was dying of spinal meningitis. Somehow the doctors got some penicillin. It was delivered by military police and they guarded his hospital door until it was used up. He recovered."

A comparison of the similarities and differences in the search for a cure for AIDS and the discovery and development of penicillin will help visitors of all ages to understand more about larger issues of health care, government involvement and medical science.

It seems that the basic discovery and production of penicillin will be of more interest to visitors than the story of collaborative efforts among research facilities or drug companies. Although visitors expressed interest in knowing about the people involved, they are not likely to be interested in much technical detail. Have the book "Yellow Magic" available for purchase.

The emotional content and impact of this topic provides the exhibit developers with several "hooks," and many emotional aspects can be utilized throughout the exhibit. By reading survey responses to the question "How will it make you feel?", exhibit planners can develop experiences which can fulfill those varied expectations. As one participant remarked, "You can play a lot on peoples' emotions with this topic, but end with an upbeat."

The exhibit outline and topics for "Manufacturing a Miracle: Brooklyn and the Story of Penicillin" have been validated by this survey, and the places for most emphasis have been identified, based on potential visitors' interests. Given only the title of the exhibit, visitors were able to accurately predict the content of the exhibit, and they named many of the topics planned for inclusion.

To make the exhibit outline follow visitors' expectations more closely and answer their first questions first (e.g., satisfy curiosity), the exhibit should begin with a section on "Why Brooklyn?" The underlying notions of magic, miracles, unrealistic expectations of drug cures can be addressed a section on "The Miracle," which would also include the connections with World War II, propaganda and allocation. A section called "The Mold" could answer visitors questions about where it comes from, how it works, why some people are allergic, synthesis and survivor's stories. These three sections would not be mutually exclusive in the topics included; rather, many sub-themes, such as manufacturing, "miracle drugs," and the social impact of penicillin, would appear in more than one place--told in the context of that section.

This exhibit has the potential to be very successful in terms of visitor appeal and visitor use. The topic is an engaging one, high in emotional appeal. Visitors have told us what they know, expect, and feel, as well as what they don't want.

Given only 300 square feet, the exhibit could easily contain information to appeal to most BHS visitors and be thoroughly utilized by the majority of the audience. By limiting the content (e.g., three sections, not six) and maximizing the variety of exhibit techniques (e.g., photos, objects, AV, interactives, models), the money spent on the exhibit (costs) can have a high impact (benefits).

The three key factors for this exhibit, pride, interaction and relevance, that were discussed in the March planning meeting and have been reinforced and amplified by this survey. The exhibit team should continue to keep the survey information in mind as they shape the exhibit and create appropriate experiences which will fascinate, not bore, viewers who choose to come to this special exhibit. Visitors should discover the kind of feeling that leads them to tell their friends, "You should go and see the penicillin exhibit at the Historical Museum. It's really great!"

Thanks to data collectors LR, LM, DJP and FC on 10, 17, 20 and 24 March 1993,
and all the visitors to BHS who shared their thoughts.

B. Serrell, 12 April 1993

To: Liza From: Beverly

These are some random thoughts and ideas I've had as I've been going along. Use or ignore as you wish.

How about an interactive flip label quiz featuring one cantaloupe, two wars, three scientists, four diseases, five vats and six mice?

Question: What to cows, chickens, catfish and penicillin have in common?

Answer: They are all domesticated organisms, raised and harvested for human consumption.

See the New York Times Science section article "The Background of Lorenzo's Oil: When a Movie Outruns Science" February 9, 1993.

Why Penicillin Can't Cure the Common Cold: Because colds are caused by virus and penicillin only works to fight bacteria infections.

You should tell the story of how P was discovered--viz expect it--but don't have to make a big deal or put lots of emphasis on it, or discuss arguments. Should be able to find it easily and early, and so viz can "do it" quickly and go on to other things.

The role of women in science seems to be a less important, off-the-track theme for this exhibit. Suggest that you do not include it as a theme, although it will "show" in the photos of people involved.

Were Merck and Squibb in New York also? If not, put little emphasis on them.

Delete DDT, rubber and Bomb topics.

Do not use unfamiliar proper names in theme areas in the exhibit, e.g., The Discovery of Penicillin (no Flemming); Solutions to Early Penicillin Production Problems (no Oxford); Production of Penicillin in Brooklyn (no Pfizer); The Man

Who Called the Shots (no Keefer).

It will be tricky to tell the story of what Pfizer did that made it work without getting too technical. Can relate to fermentation: viz know a tiny bit about that? Put more emphasis on skill, corporate culture, Germans, teamwork, round the clock, devotion, impact on Pfizer and the neighborhood.

Maybe get one of the old big vats and squeeze it into the temp exhibit space so visitors have to squish themselves into the space to see and learn more? What about a refrigerator?

Urine concentration story in the bathroom!

Most of the emotional impact can be created through carefully crafted words-- statements, testimonials, catchy titles, letters, quotes, etc. Stunning artifacts not necessary (or available).

"Yellow Magic" layout, design, organization is not a good model for the exhibit. Needs more relevance and pizzazz.

Put 3-D artifact on Intro label. Don't put Intro label in same position as the current one (Cemetery).

The ideas (discussed in March meeting) that viz might expect to read a lot, feel intimidated by science and not do much in the exhibit were borne out by survey.

Definitely include a big dish of growing penicillin. Martin Weiss can supply it.