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# **Capturing Every Patron Interaction: The Move from Paper Statistics to an Electronic System to Track the Whole Library**

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**ABSTRACT.** Reference departments track patron interactions to illustrate the type and number of services provided as well as to tailor librarians' time and expertise to the interest and needs of their patrons. Until 2010, the Reference, Education, and Community Engagement Department at the Calder Memorial Library tracked statistics using a complicated system of paper tic sheets and two Excel™ spreadsheets. After considering different electronic systems, the department decided to employ an electronic form created with SurveyMonkey™ to track patron interactions. After the system had been in place for three months, the authors administered a Satisfaction and Use survey to collect faculty and staff feedback on the new system. Seven months later the authors undertook usability testing to collect further evaluative data on the electronic form. The patron interaction form continues to be used to collect statistics, provide data for annual reviews, and recognize the contributions of all faculty and staff at the library.

**KEYWORDS.** Library statistics, reference services, reference statistics, SurveyMonkey, usability testing

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**Author credits:** Emily Vardell, MLS, created the original SurveyMonkey electronic form, developed the overall plan and organization of the paper, formatted and edited the paper, and authored Creating the Survey and Conclusion; Kimberly A. Loper, MLIS, conducted the usability study and authored the Usability Study section; Vedana Vaidhyanathan, MSLS, authored the following sections: Introduction, Trends, Background, and Satisfaction and Use Survey. Emily Vardell and Vedana Vaidhyanathan designed the Satisfaction and Use Survey and partnered to analyze the results.

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## ***INTRODUCTION***

In the past the, Calder Memorial Library's reference and education statistics were compiled monthly from daily, handwritten tic sheets, where librarians marked a tic for each transaction, indicated the resource discussed, and denoted the type of transaction (reference or education). Daily tic sheets were entered in an Excel™ spreadsheet, then tabulated and transposed into an additional Excel spreadsheet. Time spent in the classroom providing library instruction was added into this spreadsheet. The department then provided library administration with a monthly spreadsheet containing the breakdown of the statistics. The entire process was time-consuming, and, with the addition of new library faculty members, it was determined that the librarians should explore more efficient and time-saving methods of compiling statistics. The discussions of the statistical tic sheets brought to light the fact that librarians were not uniformly labeling transactions as either reference or education because there was no clear, universal definition of those terms. Confusion about these terms and lack of ready access to the tic sheets when not at the reference desk caused the statistics to be considered inaccurate for reporting purposes. While exploring options for a more accurate and convenient system, the librarians also recognized that a new system needed to provide statistics that answered questions posed by the American Association of Academic Health Sciences Libraries (AAHSL) and the Association for Research Libraries (ARL) in order to properly report statistics to those organizations.

## ***TRENDS***

To determine how other libraries address this issue, the authors surveyed the literature, consulting general library and information science literature along with specialized literature targeting medical librarians. The librarians wanted to expand the collection of statistics to capture more completely the interactions the entire library staff had with patrons. They also sought to express statistically that, though there were fewer patron interactions recorded, many of those interactions were more in depth than previously experienced and captured. This trend was discussed in the article “Making Reference Service Count,” where Judith Garrison states that:

Two significant trends contributed to our decision to change to an online system of collecting, storing, and reporting data about reference services. One was the increasing complexity of the information we were collecting through daily records and occasional samplings. As we added data elements to track over the years, our recordkeeping forms and process became more intricate and time consuming. The second impetus came from the responsibilities reference librarians were assuming for their own professional practice. There was a growing desire to have more flexible access to the data we were collecting to judge the impact of instruction and subject liaison activities.<sup>1</sup>

To address this growing trend and demonstrate the ways member libraries were changing, the Association for Research Libraries (ARL) compiled a survey of their member libraries to learn how they captured reference statistics. The results were published in a *SPEC Kit for Reference Statistics and Assessment*. Compiled by Eric Novotny in 2002, it reported that “for those respondents who record data on reference transactions, the overwhelming majority (99%)

do so manually, using the traditional tic mark on a piece of paper.”<sup>2</sup> In Novotny’s *ARL SPEC Kit*, he emphasizes the idea that:

With many librarians feeling as busy as ever, some have concluded that the reference service data being collected does not accurately record their own level of activity. This is not a new sentiment, the library literature is replete with lamentations over the inadequacies of reference statistics, but the dramatic decline in recorded reference desk activities appears to have generated renewed interest in addressing the problem of developing meaningful measures of reference activity. The migration of reference activity to areas beyond the traditional reference desk (e-mail, chat, office consultations), has further motivated many libraries to re-examine and modify their current practices.<sup>2</sup>

Many articles discussing the trends in reference statistics focus on the development of an electronic tool, often designed from scratch, to address the needs of a particular library. In a review of the system designed and implemented at all Texas A & M University libraries, a need to “focus on recording the type, length, and complexity of reference service provided” was identified.<sup>3</sup> Smith also suggested focusing “on reference consultations as points of instruction and document[ing] the information literacy proficiencies taught in each consultation.”<sup>3</sup>

## ***BACKGROUND***

To supplement a review of the literature on collecting reference statistics, Calder librarians posted a request for information on seven health sciences library mailing lists, asking for the methods currently being used at other libraries and for suggestions on what might be effective at

the Calder Library. The request was posted on August 21, 2009 to the following lists:

LIBREF-L, MEDLIB-L, NAHRS, CANMEDLIB, CAPHIS, aliaHEALTH, and LIS-Medical.

The e-mail which was sent out stated the following:

Hello, everyone. In our Reference & Education department, we rotate: one of us is on the desk while the other two are in our offices (or teaching around campus). We have a paper chart at the reference desk whereby we can capture our reference question statistics; however, this doesn't capture the reference questions we receive in our offices or during non-work hours – we have to remember to mark them down on the master chart downstairs. There's got to be a better way. Does anyone have a better method? We want our data to be automatically compiled into one central point, so 3 paper charts are no good. We could have the chart in Google Docs, but I would prefer a small widget that we could have on our computers that we can make our tick marks on—and that would combine all our inputted data automatically. Any ideas? (Tanya Feddern-Bekcan, August 21, 2009)

The librarians then compiled a list of the statistical tracking software products which were used at other libraries. The supplied responses included information about commercial products, homegrown products, and open-source programs.

Calder librarians explored several commercially available systems, including DeskTracker and DB/Textworks, as well as systems created by other libraries, such as Refstats, a web-based widget program created by the Bracken Health Sciences Library at Queens University. The use of commercial software systems was rejected due to cost. A cold fusion based database system was considered and subsequently rejected due to the amount of time it would take to build the system. The decision was finally made to implement SurveyMonkey™ to

track patron interactions, because the librarians had experience using it. SurveyMonkey is inexpensive, and there was no need to design a new tool.

### ***CREATING THE NEW ELECTRONIC STATISTICS FORM***

The questions in the electronic form were based on what had previously been recorded in the library's print form, and were then clarified using the guidelines for the Association of Academic Health Science Libraries (AAHSL) and Association of Research Libraries (ARL) statistics. The previously employed short, print form captured the number of questions answered, the resource discussed, and whether the interaction was "educational" or "reference." Educational interactions were previously considered by Calder librarians to be any interaction during which the general principles of a resource were taught. Interactions that dealt with a particular question were counted as reference transactions. After consulting the AAHSL and ARL guidelines defining reference and educational questions, the librarians determined that the current question definitions used in the library did not coincide with these national associations' definitions. The AAHSL statistics draw on the definitions provided by ARL and the National Center for Education Statistics (NCES). According to ARL, a reference transaction is an "information contact that involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff."<sup>4</sup> In the framework established by NCES, information services to groups (i.e., education transactions) are defined as "presentations at which a staff member or person invited by a staff member provides information intended for a number of persons and planned in advance."<sup>5</sup> With these definitions as guides, the librarians decided that all interactions recorded with the form, whether at the reference desk, in



an office, as an e-mail, or otherwise, would be designated as reference statistics. Formal presentations and classes would be recorded by separate means.

The newest versions of the AAHSL and NCES statistics also request information about the number of transactions fulfilled virtually, including e-mail and chat services. To capture this information, a question was included in the electronic form that asks whether the interaction took place by e-mail or phone, face-to-face in the library, or in an individual's office, along with other options. An additional reason to capture this information was to assess the feasibility of offering librarian services on call. If the majority of the interactions recorded were by phone, e-mail, or in an office, it would support reducing librarian hours at the reference desk.

As with the previous version of the statistics form, library administration and public services librarians were interested in capturing the resources discussed in the interactions. This information supports collection development decisions, as well as informs the priorities of the reference and education activities of the library. The resources listed in the electronic form were selected based on the previous years' usage statistics. The list of resources in the form continues to be modified based on responses (those resources which are never or rarely selected have been removed from the form), as well as changes to the collection.

Calder Patron Interaction Statistics: include all one-on-one interactions Exit this survey

**\* 1. Who are you?**

<input type="checkbox"/> Administration Staff	<input type="checkbox"/> Carmen Bou-Crick	<input type="checkbox"/> Geddy Paulaitis
<input type="checkbox"/> Biomed Staff	<input type="checkbox"/> Jenny Garcia-Baroena	<input type="checkbox"/> Erica Powell
<input type="checkbox"/> Circulation Assistant	<input type="checkbox"/> David Goolabsingh	<input type="checkbox"/> JoAnn Van Schaik
<input type="checkbox"/> ILL Staff	<input type="checkbox"/> Brenda Linares	<input type="checkbox"/> Emily Vardell
<input type="checkbox"/> Systems Staff	<input type="checkbox"/> Kim Loper	
<input type="checkbox"/> Technical Services Staff	<input type="checkbox"/> Mary Moore	

**2. What time did this patron interaction occur?**

7:30am-9am  
  9am-11am  
  11am-1pm  
  1pm-3pm  
  3pm-5pm  
  5pm-8pm  
  8pm-12am

**3. How did you answer the question?**

Email (Ask-a-Librarian)  
  Email (individual email address)  
  In person at the desk  
  In person at the UMH Library  
  In person in my office  
  In person at the Psychiatry Library  
  Phone  
  Phone at the UMH Library

Other (please specify)

**\* 4. What did you talk about? (Note: Directional questions include the location of restrooms, the library's hours, or service policies.)**

<input type="checkbox"/> Directional Only	<input type="checkbox"/> E-Journals	<input type="checkbox"/> PubMed
<input type="checkbox"/> Library Catalog	<input type="checkbox"/> ILL	<input type="checkbox"/> QUOSA
<input type="checkbox"/> CINAHL	<input type="checkbox"/> Internet	<input type="checkbox"/> RefWorks
<input type="checkbox"/> Collexis/SciVal Experts	<input type="checkbox"/> Isabel	<input type="checkbox"/> Remote Access
<input type="checkbox"/> Doctoring Consultation	<input type="checkbox"/> MDCConsult	<input type="checkbox"/> Scopus
<input type="checkbox"/> DynaMed	<input type="checkbox"/> OvidMEDLINE	<input type="checkbox"/> Technical Support
<input type="checkbox"/> EBP	<input type="checkbox"/> PsycINFO	<input type="checkbox"/> UpToDate
<input type="checkbox"/> Other (please specify)		

**\* 5. What was the question (in 10 words or less)?**

**\* 6. How long did you spend on this patron interaction?**

less than 5 minutes  
  5-20 minutes  
  20 minutes to one hour  
  One hour or more

**7. What is the affiliation of this user?**

University of Miami  
  Jackson Hospital  
  UMH  
  VA  
  CLASSIC  
  General Public  
  Other  
  Unknown

**8. Did you have to refer this question to someone else?**

No  
  Yes, to Administration  
  Yes, to Biomed  
  Yes, to Circulation  
  Yes, to ILL  
  Yes, to Reference  
  Yes, to Systems  
  Yes, to Technical Services

Other (please specify)

**9. Additional comments.**

**Legend: FIGURE 1. Patron interaction form using SurveyMonkey**

The electronic form also includes a question about the person providing assistance. The timing for adding this question was quite fortuitous. The Calder librarians now complete annual faculty reviews which require more documentation than in past years. The interactions recorded with the electronic form help librarians demonstrate the number of reference interactions they provide, as well as the amount of time spent, the resources covered, and the method of interaction.

Once the electronic form had been created, all library staff were asked to add a link to the form as a button on their browser or an icon on their desktop to facilitate consistent use. A library-wide e-mail was sent to introduce the system, and supervisors followed up with any necessary training on the new system.

## ***LIBRARIAN SATISFACTION AND USE SURVEY***

### ***Survey Questions***

Three months into electronic form implementation, the librarians who developed the form questions administered an online library-wide satisfaction and use survey. The Satisfaction and Use Survey was conducted in September 2010, and distributed to the 29 library faculty and staff members at the Calder Memorial Library. Twenty-five of those employees (86%) completed the online survey. The Satisfaction and Use Survey attempted to capture, both quantitatively and qualitatively, how library employees felt about the shift from individual departments capturing statistics to a library-wide approach. Survey responders were asked the following questions:

1. How often do you interact with patrons?

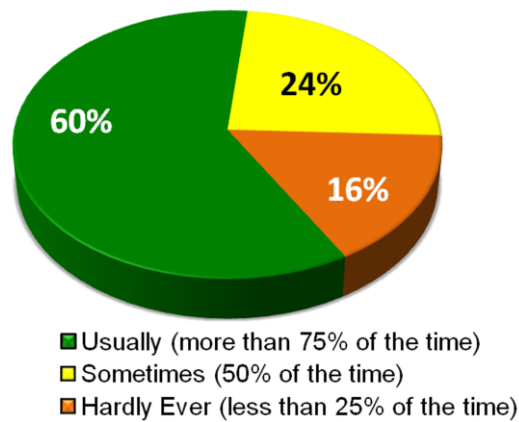
2. How often do you record your patron interactions with the electronic form?
3. How long does it take you to fill out the electronic form?
4. The new online electronic form helps me track my interactions with patrons.  
(agree or disagree)
5. Do you incorporate the electronic form into your daily work routine or is it something you save until the end of the day?
6. How easy was it to incorporate the electronic form into your daily work routine?
7. If it has been difficult to incorporate the electronic form into your schedule, why?
8. Would you prefer to record patron interactions on paper or using the electronic SurveyMonkey method (currently used)?
9. What is your favorite thing about the electronic form?
10. If there was one thing you would change about the electronic form, what would it be? (If you wouldn't change anything on the form, please write the word "Nothing.")

### ***Results of the Satisfaction and Use Survey***

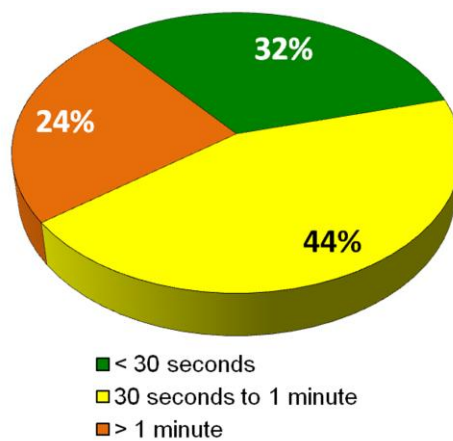
The first question asked was "How often do you interact with patrons?" Forty-eight percent said they interact with patrons more than once per day, while 8% reported that they interacted with patrons less than once per week. Thirty-two percent volunteered they interacted with patrons between one and four times per week. Twelve percent reported that they fell into the "other" category. Written-in answers included 40-80 times a day.

The second question asked was "How often do you record your patron interactions with the electronic form?" (see Figure 2). Answers were as follows: 60% stated "Usually" (i.e., more

than 75% of the time); 24% stated “Sometimes” (i.e., 50% of the time); and 16% stated “Hardly Ever” (i.e., less than 25% of the time). For the question designed to estimate form completion time, 44% reported that it took them between 30 seconds and one minute to complete the form, while 32% said that it took less than 30 seconds. Twenty-four percent reported it took them longer than a minute to complete the form (see Figure 3).



**Legend: FIGURE 2. How often do you record your client interactions with the electronic form?**



**Legend: FIGURE 3. How long do you believe it takes to complete the electronic form?**

Along with this, 84% of those who took the survey reported they record interactions at least half of the time. Fifty-six percent incorporated the electronic form into their daily routine. In perhaps the most encouraging feedback, when asked if they preferred an online or a paper-based system, 92% preferred the electronic over the previous paper-based system.

A side effect of the Satisfaction and Use Survey was that it reminded faculty and staff to use the electronic form itself, which increased the number of interactions that were recorded following the Satisfaction and Use Survey. The results of this study confirmed that the new electronic method was preferable to previously existing methods of capturing patron interactions. It also established that some faculty and staff members had more fully incorporated the electronic form into their work flow than others. This discovery led the survey team to identify the need for a usability study, which was conducted four months after the Satisfaction and Use Survey.

### ***USABILITY STUDY***

A usability study was performed seven months after electronic form implementation (and four months after the Satisfaction and Use Survey) to assess staff perceptions about the form's ease of use, perceived time requirements versus actual observed and recorded time to complete the form, and its effectiveness for recording all patron interactions. Researchers were also interested in what revisions, if any, were needed to improve the electronic form.

#### ***Usability Subject***

Testing was performed during 13 individual sessions (n=13). To ensure that all levels of users were represented, selected participants were composed of a combination of faculty, administrative professionals, and staff.

### *Pretest Questions*

Prior to testing, participants were asked a set of questions to determine the amount of interactions they recorded, in what manner they accessed the electronic form, and estimated length of time it took to complete the form each time. Questions were:

1. What percent of client interactions do you record with SurveyMonkey?
2. Do you have a direct link to the electronic form?
3. How long do you believe it takes you to complete the form?

In response to the pretest questions, it was revealed that only 69% of participants said that they record at least half of their actual patron interactions. Ninety-two percent (92%) of the participants had placed a link to the electronic form on their computer desktop so they could easily and quickly access the survey. Most participants felt that they could complete the form in less than 30 seconds.

### *Testing*

Testing was performed on the finished form at the primary work station of each participant to ensure participants were as comfortable as possible and that the testing would take a minimum amount of their time. Participants were assured before testing began that evaluating the form, not

their job performance, was the focus of the activity. Participants were informed that they would be asked a typical question that they might receive during a work day. They were instructed to answer the question to the observer and then complete the form without giving any feedback. The role of the observer was to watch the user, time the activity, and take notes during form entry.

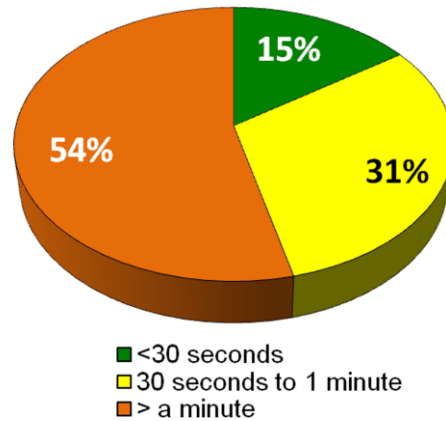
### ***Post-Test Questions***

Once timed observations were completed, participants were asked to reopen the electronic form and offer suggestions on how, if at all, they would change the form to improve it. During this stage, participants went through the form with the observer and commented on the individual questions asked in the form.

### ***Results***

Thirty percent (30%) of participants reported that the electronic form took less time than was actually observed and recorded. The observed times for form entries ranged from a slowest completion time of 112 seconds to a fastest time of 22 seconds. However, 46% of all participants completed the electronic form in less than one minute (see Figure 4).





**Legend: FIGURE 4. Actual timed results to complete the electronic form**

When asked how the electronic form could be improved, all but three participants offered suggestions for improvement. The three participants who offered no suggested improvements said they felt the electronic form was fine as is and could capture all the data they would need for their reporting requirements. Of those who made suggestions, the areas of improvement included:

- Change formatting so that all options show on the screen. (Note: The layout of some questions required the user to scroll across the screen to see all options.)
- Offer fewer choices on resources question but increase the number of choices on the question that captures interaction time to better reflect the amount of time a particular interaction may take.
- Needs to let you know where a mistake or missing information is.
- Add an option for Administrative staff.
- Create a separate electronic form for each [library] department so that those departments that wouldn't handle all the various questions do not have to complete the whole form.

These suggestions were incorporated into the latest version of the electronic form to improve the information recorded by the form as well as assure staff that their input is valued and encouraged.

### *CONCLUSION*

The electronic form was successfully employed to track an entire fiscal year of statistics. Librarians were pleased with the minimal amount of effort required to report monthly and annual statistics. In addition, the manipulation capabilities within SurveyMonkey allowed librarians to track when and where the reference interactions were taking place, facilitating evaluation of an on-call system as well as allowing for evidence-based decision making regarding holiday staffing.

The librarians observed that the numbers have decreased since the first two or three months of electronic form implementation. The sharpest decrease is in the number of interactions recorded by circulation assistants. Although a small percentage of this may be attributed to fewer people in the library, the overriding cause is most likely forgetfulness. Remembering the electronic form continues to be a struggle for some members of the faculty and staff, most especially those in the Circulation Department and also those who do not interact with patrons on a regular basis (e.g., Technical Services). The Satisfaction and Use Survey, as well as the usability study, served not only as evaluation tools but also as reminders for all employees to use the electronic form. The librarians encourage regular use of the form to track statistics.

One of the universally appreciated benefits of the electronic form is that it enables recognition of work done throughout the library. While the previous paper tic sheet was used

exclusively by reference librarians and supplemented with separate statistics from the Circulation Department, SurveyMonkey is used to collect information on the work done in every department of the library. This allows for more accurate reporting of annual statistics and also encourages staff by assuring them that their work is counted.

Librarians continue to make minor adjustments to the electronic form based on colleagues' feedback. They also continue to explore methods for encouraging consistent entries. The electronic form created in SurveyMonkey has maximized librarian time by simplifying the method of reporting monthly and annual statistics. The electronic form has also supported documentation of librarian activities and administrative decisions regarding staffing policies.

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