

**Preparing for a slimmer bottom line: Analyzing and reducing
a serials collection using a mixed methods approach**

Lori Delaney, MLIS
Carolina Population Center
University of North Carolina at Chapel Hill

The purpose of this study is to conduct a comprehensive evaluation of a serials collection in a special library to make evidence-based decisions during an annual subscription renewal and cancellation process. Using both quantitative and qualitative data collection and analysis methods, this study features an evaluation of the collection title-by-title and results in subscription costs that are 45% lower than the previous year, while also aiming to provide a serials collection that is useful and relevant, and stays true to the specialized nature of the library itself.

Context

The Carolina Population Center (CPC) Library is a special library at the University of North Carolina at Chapel Hill (UNC), which primarily serves CPC researchers. CPC researchers are faculty members of UNC academic departments who are elected Fellows of the Center and who conduct population research. CPC researchers are also preceptors of doctoral students at UNC who are “trainees” of the Center, which make up another user-base of the CPC Library. To support the research of the Fellows and the trainees, the Center has a professional staff of about 150 who provide a variety of services including the library, data support, programming, spatial analysis, and graphics support.

The CPC Library also serves the UNC community and the general public. The library houses a collection of materials which support a broad range of subjects that contribute to the knowledge base of the population field. These range from sociology, demography, and economics, to nutrition, reproductive health, and public health, to population statistics and methodologies of statistical data collection and analysis. This diversity of subject-matter is a direct reflection of the diversity of the Fellows’ disciplines, and thus their departmental

affiliations, which range from departments of Sociology, Economics, Anthropology, or Public Policy, to Maternal and Child Health, Nutrition, or Epidemiology, to Geography or Biostatistics. The research that many Fellows conduct is of an interdisciplinary nature, exploring and capitalizing on how the knowledge of multiple disciplines may contribute to the understanding of a specific population question or problem. For this reason, there is a great deal of collaborative activities at the Center.

At the CPC Library, the monograph collection and the reprint files are available for checkout by UNC faculty, students, and staff. The serials collection is for in-house use only and does not circulate. The library is located a couple blocks off campus on a major commercial street of the town. The library does not receive much serendipitous traffic as many new users do not realize that there is a library located in a 5-story office building. Most non-CPC users have discovered the CPC Library by searching the UNC Library catalog and finding the materials that they want.

CPC is a research center which has a broad funding portfolio, and some services such as the library are primarily funded by the National Institute of Child Health and Human Development, at the National Institutes of Health. Because the CPC Library is solely funded by the Center, and is not a departmental library of the UNC system, collection development administration is the responsibility of CPC Library staff, and costs for the serials collection are paid from the budget of the CPC Library.

A thorough evaluation of the CPC Library's serials collection was needed for three separate reasons:

1. A reduced annual budget allocation that was expected
2. The Center's evolving research portfolio into new areas of population research
3. An increase in the electronically available content via the UNC Libraries databases.

The CPC Library uses a subscription services agency, which managed print-based subscriptions to 90 titles in 2005. For many years prior to my arrival at CPC in 2005, funding was plentiful and library staff could review and pay the annual invoice sent from the subscription services agency, with perhaps a modification of adding one or two titles or not renewing a couple of others. The price increases of the journals were sometimes significant, but the library could then afford it by making adjustments to other acquisitions. With a new NIH funding mechanism

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for general infrastructure that started at CPC in 2005, I knew that the acquisitions budget would shrink substantially, and I had to develop a plan corresponding to the funds that would be available.

This study chronicles that process, and I hope that some of the methods that I used and tools that I developed may help others who face a similar responsibility. Though most libraries have reduced their serials collection due to financial needs at some point or other, this study reflects the position of a specialized library which has a presence on an academic campus and yet is not a part of the official university library system. The process that I describe could certainly be used by or adapted to many settings, especially those in small or specialized libraries.

It is important to note, however, that the CPC Library benefits from strong working relationships with the staff of two of the primary libraries on campus, Davis Library and the Health Sciences Library. The relationships have been fostered over 40 years and include guidance and advice on cataloging, collection development, circulation, and electronic resource management.

In my review of the literature, I consulted publications about the serials analysis process and the criteria used to decide which print titles to renew and which titles to cancel. I did not review the literature pertaining to electronic formats, including the process of cancelling a title in print in favor of the title available electronically. I focused my review on case studies of libraries who have reported on their serials review process. Of the various criteria that were used to analyze a collection, many used usage statistics (Christensen, & Spackman, 2006; Enssle & Wilde, 2002; Francq, 1994; Gallagher, Bauer, & Dollar, 2005; Nixon, 2000; Spang, 1995; Srivastava & Harpel-Burke, 2005; Walter, 1990; Ward et al., 2006) and many used input from users, including faculty, staff, students or librarians (Sinha, Tucker, & Scherlen, 2005; Srivastava & Harpel-Burke, 2005; Walter, 1990; Ward et al., 2006). Some used costs increases or inflation rates of the serials (Bosch & Simons, 1996; Francq, 1994; Nixon, 2000; Walter, 1990; Ward et al., 2006). Content that was accessible in other formats was a criterion that was used by some (Sinha et al., 2005; Walter, 1990), and duplication of content at other libraries was another form of evaluative criteria (Nixon, 2000; Spang, 1995).

The vast majority of literature reports on initiatives by medium to large academic libraries to evaluate their serials collections with the goal of reducing their subscription costs. My project was different because I evaluated a small specialized collection that primarily served

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a focused group of users. Though I valued and applied many important factors and criteria from the literature, there were no publications according to the search strategy that I used that specifically addressed my situation. As a result, I was a consumer of research by considering the literature and applying certain aspects from the literature to my serials analysis project, and I was also a producer of research since others from small, special libraries had yet to disseminate results of a similar project.

Methods and Analysis

I knew the specific target that I was aiming for, a payment for 2006 annual subscription costs that was reduced by 40%. I knew I could not have as my goal to cancel a fixed number of subscriptions because the cost per title ranged a great deal. The unknown was which of the 90 titles were to be cancelled and which were to be renewed. I maintained a stance that the data collected would inform the decisions well-enough, and that it would not be beneficial for me to hand-pick which titles I expected would be cancelled, and which would be retained. However, I did expect some tough decisions through the process. And I had 10 weeks to gather the data, make the decisions, and seek input from key stakeholders.

This study utilized a mixed methods approach in a sequential triangulation process. Quantitative data was derived from multiple sources: cost per title (previous year, current year, and next year and rate of increase across the three years), usage statistics, availability in print from other UNC libraries, and electronic availability via campus databases or freely available from a publisher's website. In addition, data was compiled on the number of articles written by CPC researchers, trainees and staff in each serial during the previous three years. These data were analyzed and a collaborative review of the data was conducted by two librarians on staff, which resulted in a proposal of which titles to renew and which titles to cancel, with a detailed breakdown of the financial implications. Qualitative data was obtained from the Center's Director, Deputy Director, and the Advisory Council, resulting in a revised proposal. The revised proposal was then distributed to CPC researchers, trainees, and staff with a request for further input.

The serials collection included some journals published by major professional associations in the population field as well as journals published by major publishing companies,

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and these contributed to the broad base of the knowledge of the field. Most of the content of these was then available electronically via the UNC Libraries databases. Some journals at CPC were published by agencies internationally often covering population issues in Africa, Asia or Latin America. CPC often had unique print holdings of these on campus, and content was occasionally available electronically via the databases. Finally, the serials collection also had titles that were known and used by professionals in the field but were not considered top-notch journals. Content of some of these journals was sometimes available electronically, and sometimes available in print at other libraries on campus.

Some serial titles at the CPC Library were unique print holdings on campus, while other titles were also held in print by other campus libraries. Duplication of titles was suitable when the subject-matter was highly relevant to population research, a core title.

In early June 2005, I started by collecting data for the actual subscription costs of each title in 2003 and 2004. This information was obtained directly from the invoices for those years. I also used the estimated costs for 2005, which were obtained from the annual renewal list sent by the subscription services agency. This data was entered into an Excel spreadsheet, title by title.

I then calculated the rate of change (usually an increase) for each title between the actual 2003 cost and the estimated 2005 cost. This rate of change ranged from -12% for one journal that was recently published on the Internet and made available for free, to 185% for another title. This calculation was useful to see which titles had costs that were skyrocketing, and which titles had changes in costs that were more modest or non-existent. This data was not used immediately for any decision-making, but was informative in a broad sense in realizing the diversity of rate increases.

I next compiled in-house usage statistics of the journals for the previous three years. Though usage statistics were gathered each month of those years, the accuracy of the statistics is questionable for a number of reasons. First, the journals that are used are often re-shelved by CPC researchers or other users who are trying to be helpful. Second, as a small library with less than two full-time-equivalent professional librarians, sometimes the reference desk is not staffed during regular hours. Use of the journals sometimes occurs during these times. Third, one use is counted whether someone referred to one article, or many articles in the serial. That said, the usage statistics had been gathered monthly for years using a document that listed each title and a

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staff person entered a tick mark next to the title when a journal was on a table or on a bookcart. These statistics were entered in a different worksheet of the spreadsheet because there were separate columns for each year, and it was simpler than expanding the primary spreadsheet. These statistics were informative, though no major decisions were attributed directly to this data.

Next, I searched the UNC Library catalog to identify which journals were available in print at other campus libraries, noting the dates and years of holdings. Some had holdings going back many years, some had been cancelled a decade earlier, and some had been recently cancelled in favor of electronic access to the content. I couldn't depend on the journal title merely having a record in the library catalog; I had to identify the exact holdings at other campus libraries.

While conducting a search of each title in the library catalog, I also documented whether there was electronic access to the title, which vendor(s) provided the electronic access, and again noted the years that full-text content was accessible. Some catalog records provided a URL directly to a publisher's website on the Internet, and I found that the content of the serial was available for free.

The last set of data gathered that was of a quantitative nature was the number of articles that were authored by CPC researchers between 2003 and 2005. The CPC Reference Librarian has developed and maintains a large bibliographic database of all of the articles and books written by CPC researchers. This information is routinely provided to our funder to show the breadth of research and potential impact it may have. The reference librarian searched the database for articles published between 2003 and 2005 and developed a list of all those published in the journals in the collection. Some titles had zero articles by CPC researchers, some had four or five and one title had 16 articles during that timeframe.

This data was informative for two reasons. One, the more articles by CPC researchers in a journal indicated an increased relevancy of the journal to the work being done at the Center. The opposite did not hold true though, that the journals that had no articles by CPC researchers could still be highly relevant and useful.

Second, for the titles that did publish at least one article by CPC researchers were, at some point, consulted for the author's guide whether in the journal in the collection, or online. I had observed six Fellows or trainees during that year who consulted the print journals for an author's guide or to evaluate the journal's content for potential submission of a not-yet-

completed manuscript. For this reason, the statistics of how many times CPC researchers published in a journal could indicate a higher potential of someone browsing the print copy.

Some of the literature reports others who have evaluated a serials collection for reduction have used other quantitative data such as impact factors and cost per usage (Enssle & Wilde, 2002; Ward et al., 2006).

I chose not to use impact factors as an evaluative tool for several reasons. Impact factors are notable because they are used to identify the level of impact – many translate this to mean the level of prestige – that journals have in a certain discipline. Because impact factors are discipline-specific and because CPC is an interdisciplinary research center encompassing the health sciences and the social sciences, it is feasible to expect that if the library would place high value on journals with the highest impact factors, that the library would then subscribe to them. That would mean that the library should subscribe to those journals, of which there are many when the subject matter of our research ranges so widely.

Secondly, some journals that have lower impact factors, or none at all, can be valuable because they include cutting edge or exploratory research that may be very intriguing to researchers who are looking at complicated issues based in the human population. Additionally, these types of journals may be intriguing for junior population scholars who are exploring their options for publishing articles.

The third reason I did not consider impact factors for this study is because, for the most part, the titles with the highest impact factors are available electronically via the university's library databases. I conducted a search of the highest impact journals in sociology, economics, nutrition and dietetics, and infectious diseases (which includes epidemiology and HIV/AIDS) – four disciplines which are currently very active in research projects at CPC. All of the journals with the highest impact scores were available electronically via the campus library databases.

I also did not calculate or consider cost per usage of a journal. This figure would be very difficult to ascertain as the monthly usage statistics that were gathered counted one use whether the journal was consulted for one article, or for many articles. If a journal was left on a table or a bookcart, it was counted once. Attempting to identify cost per usage would put too much trust in the numerator. I felt more comfortable looking at the usage statistics as helpful rather than informative, as an advisor rather than statistically significant.

This was a lot of data to gather for 90 different titles, and this stage lasted about a month, until early July 2005. Because the information was being gathered title by title, an Excel spreadsheet was the best tool to use. Analysis was the next stage.

Figure 1.

Excerpt from the Excel file developed to compile various data for each serial, which was used for analysis.

Journal Title	CPC authored articles (2003 - 2005)	At UNC (where?)	Electronic Access	2003 price (03-04)	2004 price (04-05)	2005 price (05-06)	% change 03-05	Estimated 2006 costs	Notes
Adolescent and Family Health	1	No	No	\$65	\$65	\$72	11%	\$72	
African Journal of Reproductive Health	1	Davis until 2002	No	\$75	\$75	\$125	67%	\$125	
American Economic Review (also includes subscription to Journal of ...)									

I shared the document with my colleague, the CPC reference librarian who had worked with the collection for many years and knew our primary users very well. We conducted a collaborative review, reviewing the titles primarily from the perspectives of (these are not listed by importance):

- Titles that our users use
- Titles that we use
- Titles that have the most valuable content
- Number of times a CPC researcher wrote an article in the journal
- Whether a print copy is held at another library on campus
- Whether electronic access is available

Essentially, I wanted her input based on the content of the journal and its intellectual value and usefulness, and not on the financial costs of the journal. She did see the entire data set,

including the costs, but our review focused on the content. After our review was complete, it was my job to incorporate her recommendations with the financial impact.

I adapted the Excel file by adding three new columns after the Estimated 2006 Costs column: Renewal Costs, Cancellation Savings, and Rationale. The Renewal Costs and Cancellation Savings were used literally to monitor the bottom line. The last row was for the Total, and the Renewal Costs and Cancellation Savings were used in an either/or capacity. I used the figure in the Estimated 2006 Costs column, say \$1,000, and when it was selected for renewal, I placed \$1,000 in the Renewal Costs column, and added \$0.00 to the Cancellation Savings column. When a title was selected for cancellation, I entered \$0.00 in the Renewal Costs column, and the figure from the Estimated 2006 Costs column in the Cancellation Savings column. I retained the content and the integrity of the Estimated 2006 Costs column, and simply copied the figures into either the Renewal Costs column or the Cancellation Savings column.

Based on the review conducted by the reference librarian and me, I completed the entry of figures for those columns, and monitored the Total figures in the last row of the Renewal Costs and Cancellation Savings columns. I did have to make some changes to reach my proposed cost savings. I also added a brief rationale for the decision. Examples of rationales for renewing a title included: Uniqueness, Core population journal, and Frequently used. Examples of rationales for cancelling a title included: Held on campus, Multiple access points, and Not used enough.

I developed a proposal of which serials to renew and which to cancel, with a detailed breakdown of the financial implications. I prepared a one-page document simply listing the titles in either the Propose to Renew column or the Propose to Cancel column. This document was packaged with the full file, and submitted to the Center's Director and Deputy Director. The Center's Director also sought input from the Center's advisory council, a group of Fellows from diverse disciplines, who advise the Director on a range of issues. I received input from this group in mid July, within a week of submitting it to them. This feedback was very helpful, and very detailed. In one case, one pricey journal was selected for renewal, and two less expensive journals in the same discipline were selected for cancellation. One person recommended that we continue to obtain the two less expensive journals, and to cancel the more expensive one because that one was more widely available.

Based on the recommendations I had received thus far, I revised the proposal and updated the columns Propose to Renew and Propose to Cancel. The revised one-page document was

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posted on various bulletin boards in the Center's offices and posted on the library's reference desk. It was distributed to all CPC Fellows via an e-mail from the Director, and was posted as a news item on the intranet which is accessible to all CPC Fellows, trainees and staff. The document clearly specified that input was being sought and input was allowed for three weeks.

Figure 2.

Example of posting listing proposed titles to cancel and to renew, with a description of how the decisions were made. This was sent to the primary users of the CPC Library.

These recommendations are based on usage statistics, cost per title, availability at other UNC libraries, electronic accessibility, and CPC Library staff input. Upon request, I can provide this information on any of the titles listed below.

Please send feedback to Lori Delaney, lori_delaney@unc.edu, by Friday, August 5th.

Proposed Journal Titles to Cancel	Proposed Journal Titles to Renew
Ageing and Society Applied Demography	Adolescent and Family Health African Journal of Reproductive Health

Feedback at this stage was decidedly less vociferous than from the previous review, though I did receive substantial comments from three Fellows, one trainee, and one staff person. One Fellow did not object to my cancelling a journal from his discipline but wanted to know the data that I used to make that decision. I was happy and thankful to be able to give him the data in a matter of minutes.

The feedback timeframe ended after three weeks and I revised the lists of renewals and cancellations, and posted the final list on various bulletin boards in the office and on the library's reference desk. The final list was also posted on the intranet as a news item. The serials review process was complete, and it was mid August 2005.

Results

Before describing the specific results, I would like to discuss several contextual issues that also played a role in this study.

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Of the 90 serial titles at the CPC Library, some were unique print holdings on the university campus, while other titles were also held in print by other campus libraries. It was neither my charge nor my intent to retain subscriptions to all of the unique titles. In some cases, it made sense from a collection development perspective to retain subscriptions to the unique titles. In other cases, the serial was used so infrequently and/or added little value to the collection, that cancellation was appropriate.

Of the titles that were also held at other libraries on campus, the bulk of this group was made up of the “core” population journals. Duplication of these titles was suitable because the subject-matter was highly relevant to population research, a core title. How could the library be a population library without these titles? These decisions were fairly quick and easy to make.

It’s important to know that, in the context of cancellations decisions, the CPC Library has an established service, through which our courier obtains and delivers articles and books to CPC researchers and staff. The courier service is provided by an undergraduate library assistant who walks to other campus libraries to obtain materials, and processes interlibrary loan requests when an item is not available on campus. So, the fact that a title would no longer be available on the shelves was not a major consideration, I knew that we could obtain the materials usually within days to most content of the serials that would be cancelled. So I did not have to develop or adapt this type of back-up service as some have had to (Spang, 1995; Welch, 1996).

In this paper, I have focused the majority of my discussion of CPC researchers as the users of the library. Though the stated mission of the CPC, and thus the CPC Library, is to support the research needs of the Fellows, there are other users that I needed to take into consideration. In particular, I considered the needs of the university’s faculty, staff, and students by carefully analyzing the titles that we held uniquely. Were those titles ever used by a UNC person? Were those titles available electronically? For one journal in particular, our subscription provided electronic access to the whole campus.

The serials analysis study resulted in 56 titles that were renewed for the next fiscal year and 34 titles that were cancelled. The cost savings was 45% in comparison with the previous year.

The titles that were selected for renewal were primarily those that were considered core population journals, those that were used frequently, or those that published at least several articles by CPCers in the previous three years. These final selections did not place much

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importance on whether content was available electronically via the UNC Library databases. Rather, these were valuable to have in print and on the shelves.

The titles that were selected for cancellation were primarily those that were more expensive, held elsewhere on campus, and had content available electronically via the UNC Library databases, except for those which met the criteria for renewal described in the previous paragraph. Other titles that were selected for cancellation were unique holdings that were rarely if ever used and did not cost much in comparison. Many of these were the journals published about population research in Africa, Asia, or Latin America.

Clearly, these decisions were based on multiple sets of data. However, it is important to note that there was a certain level of subjectivity in the final decisions. For example, two titles which published research on Asian population issues were renewed because of their relevance, even though they were not often used. Another title - which was used occasionally, could be considered a core population journal, and was expensive - was cancelled because of the multiple ways that users could obtain the journal content (UNC Library databases, in print on campus, and via the CPC Library courier service).

Conclusion

The challenge and responsibility to analyze and drastically reduce a serials collection can be daunting. Using various sources of data provides a basis and rationale for evidence-based decision making. Quantitative and qualitative data are useful and informative, forming a more thorough understanding of the perceived and actual value of a journal title.

This study was primarily conducted due to a substantial reduction in the annual acquisitions budget and the targeted results were met. I developed and used an Excel spreadsheet as the primary analytical tool to make my decisions and to communicate those decisions to various stakeholders throughout the process. Staff of specialized libraries can utilize or adapt the data collection and analysis methods for use in evaluating their own serials collections and communicating their decisions to their own administrators, staff, and users of the collection.

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