Highlights and Lessons from the First Two Pilots of Responsive Collection Design for CATI Surveys

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Abstract
Extensive paradata research at Statistics Canada led to the implementation of a Responsive Collection Design (RCD) strategy for two Computer-Assisted Telephone Interview (CATI) surveys: Households and the Environment Survey (HES) and Survey of Labour and Income Dynamics (SLID). RCD is an adaptive approach to survey data collection that uses information available prior to and during data collection to adjust the strategy for the remaining in-progress cases. RCD objectives are to monitor and analyse collection progress against a pre-determined set of indicators to identify critical data collection milestones that require significant changes to the collection approach and to adjust collection strategies to make the most efficient use of remaining available resources. This paper provides an overview of the RCD strategy used and describes the results obtained along with lessons learned from these first two surveys used as pilots.

Key Words: Paradata, responsive design, active management, productivity, representativity, propensity model

1. Introduction

Much of the operational paradata research conducted at Statistics Canada over the past few years has stressed the need to develop a more flexible and efficient data collection strategy for CATI surveys, not only to maintain or reduce data collection costs but also to make better use of each call since a cap on call policy is in place[1]. This approach implies an adaptive data collection or Responsive Design strategy as first discussed by Groves and Heeringa (2006) for Computer-Assisted Personal Interview (CAPI) surveys. Mohl and Laflamme (2007) expanded the application of a Responsive Collection Design (RCD) to CATI surveys, developed an RCD conceptual framework and proposed several RCD strategies in the Statistics Canada context. The main idea is to constantly assess the data collection process using the most recent paradata information available (active management), and adapt data collection strategies in order to make the most efficient use of available resources remaining (adaptive collection). In other words, RCD strategy aims to use information available prior to and during collection (accumulated paradata) to identify when changes to the collection strategy are required in response to how well the collection progresses. Both pilots followed this framework comprised of active management and adaptive collection components.

The RCD strategy was first tested with the HES. Data collection took place in October and November 2009 with a targeted response rate of 75%. This survey is a dwelling-based cross-

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[1] The cap on calls Policy implemented at Statistics Canada limits the number of calls that can be made for each case during the survey's collection period.

sectional survey with a sample size of 20,000 units selected from respondents to the 2009 Canadian Community Health Survey (CCHS) between January and June 2009.

In 2010, the RCD approach was then tested with SLID, an annual longitudinal survey and one of the most complex CATI surveys conducted at Statistics Canada. Collection took place between January and March 2010, also with a targeted response rate of 75%. A cohort of roughly 17,000 responding households from the Labour Force Survey (LFS) is followed over a six-year period. To strengthen the cross-sectional estimates, a new panel is introduced every three years. During each wave of collection, data are collected for two longitudinal panels simultaneously. In the 2010 Collection, 35,642 units were in the sample (including 2,036 units generated during collection.). Members of a longitudinal panel are followed for six waves of collection. Panels have staggered start dates; every three years a new panel is selected while the older panel is rotated out.

The paper begins with a brief overview of the data collection context for CATI social surveys at Statistics Canada. The next section describes the RCD strategy used for the two surveys and how it was implemented. Sections 4 and 5 essentially focus on the results obtained and lessons learned from these first two CATI surveys.

2. Overview of Collection

At Statistics Canada, CATI survey data collection is conducted with the Blaise application. Data collection is done from the call centres that are managed by Regional Offices (ROs). During the implementation of the RCD strategy, data collection managers used the standard and active management reports based on Blaise Transaction History (BTH) files, Survey Operations Payroll System (SOPS) files for interviewers, sample design and sample unit information available prior to data collection, paradata from previous survey cycle, budgeted system time, budgeted payroll hours and targeted response rates. BTH and payroll paradata are available in a timely manner, i.e., the day after data is collected or recorded. However, the management strategy for each survey can vary by RO.

3. Responsive Collection Design Strategy

Figure 1 presents a summary of the RCD strategy for the HES 2009 and SLID 2010. The RCD strategy used for SLID was slightly modified to take advantage of the lessons learned in the first RCD and to respond to the specific active management needs of SLID. The strategy spread over 4 phases; the Planning phase, the Initial collection phase, the RCD Phase 1 and ends with the RCD Phase 2. The strategy was applied independently for every RO.

The first phase (planning) occurs before data collection starts. During the planning phase, data collection activities and strategies that will take place in the different collection phases are identified, developed and tested. The second phase (initial collection) includes the first portion of the data collection process; from the collection start date up until it is determined that RCD Phase 1 needs to be initiated. An intermediate cap on calls was also introduced to avoid cases capping out (e.g. the maximum number of calls allowed is reached) before the last data collection phase. During this initial collection phase, many key indicators of the quality, productivity, cost, and responding potential of in-progress cases are closely monitored to identify when the next RCD phase should be initiated. During the third phase (RCD Phase 1), in-progress cases are categorized and prioritized for follow-up using

information available prior to the beginning of collection and paradata information obtained during collection. The objective at this stage is to improve the overall response rate. During this phase, key indicators continue to be monitored. In particular, the representativity indicator[2] provides information on the variability of response rates between domains of interest to help determine when the last phase should begin. The last phase (RCD Phase 2) aims at reducing the variability of response rates between the domains of interest (improving sample representativity) by targeting cases that belong to the domains with lower response rates.
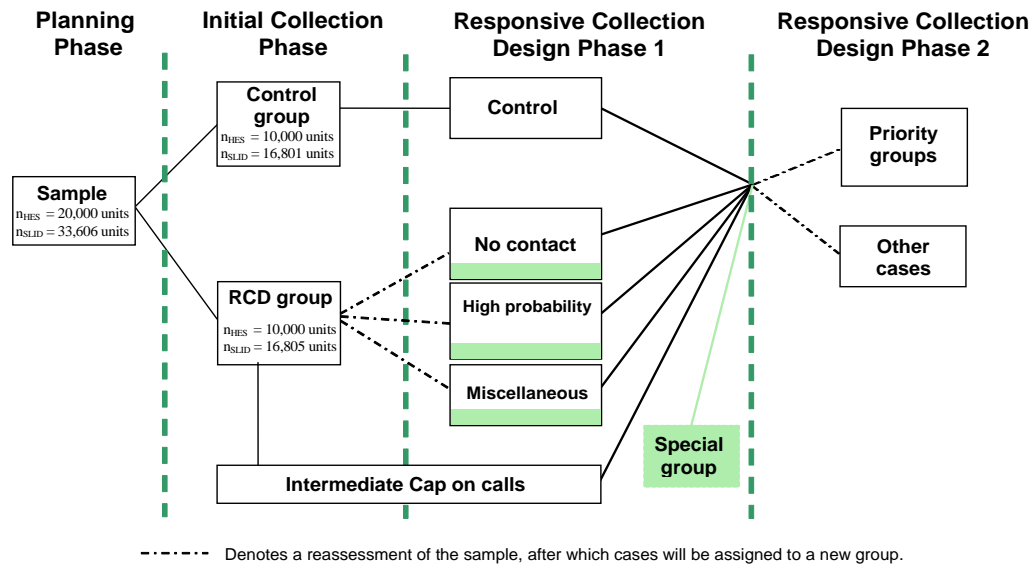

Figure 1: RCD Strategy for HES and SLID

Notes:
1. The intermediate and global caps on calls were respectively (20, 25) for HES and (30, 40) for SLID;
2. For SLID 2010, another group composed of high response probability for cases requiring tracing was created during RCD Phase 1;
3. The "Miscellaneous" group contains cases remaining in the usual Blaise Groups (e.g. Regular, Refusal, Tracing, etc.).
4. The "Special group" contains cases with a low number of calls (and relatively high response propensity) that need particular attention at the end of RCD Phase 1.

Both HES and SLID samples were randomly divided into two equal groups based on the sample design information. These groups are the control group (CG) and the responsive collection design group (RCD group). This was done to assess the impact of the RCD strategy. The CG followed the usual collection process, while the RCD group used the new strategy. It should be noted that the two groups were combined during the last phase when overall representativity of the sample was sought. Please refer to Laflamme and Karaganis (2010) for more details. Each phase is described in more details in the following sections.

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[2] The representativity or R-indicator concept was first discussed by Schouten, Cobben and Bethlehem (2009)

4. Planning Phase

During the planning phase, data collection activities and strategies were planned and tested for the three following collection phases. In practice, RCD objectives, in-depth analysis of the previous collection cycle and sample characteristics, intermediate cap on calls, active management strategy and response propensity model were investigated, developed and/or determined.

The previous data collection cycles (HES 2007 and SLID 2009) were analyzed to validate the current sample, identify opportunities for improvement (e.g. identification of the intermediate cap on calls limit), develop a response propensity model to create high response probability group(s) and determine collection strategies to be used in the different phases. This analysis was also used to improve existing active management tools, as well as to determine data collection parameters for the key indicators to identify critical data collection milestones for deciding when to move on to the next collection phase. The adopted active management strategy for the two RCD surveys took advantage of the active management experiences of many previous surveys as well as the lessons learned during the first RCD survey in the case of SLID.

The analysis of sample characteristics was used to assess any potential challenges before collection started. For example, for the HES we took into account the response pattern observed in CCHS from which the HES frame is extracted.. About 5% of the HES 2007 sample units were CCHS 2007 units that responded at the dwelling level only. These units had a much lower response rate than the remaining sample (between 15-20 percentage points lower). For HES 2009, an assessment of the CCHS 2009 frame indicated that the proportion of these cases had risen from 5% to 9%. This change could have had an impact on the HES 2009 response rate since the HES 2009 sample, when comparing to the HES 2007 sample, has a higher proportion of more "difficult cases".

The composition of the SLID 2010 sample was 74.3% respondents, 24.6% non-respondents and 1% out-of-scope cases from SLID 2009 (previous wave). The high proportion of non-respondents in 2010 is due to the 2009 response rate (71%) and the SLID's selection rules for constructing the 2010 sample frame. These two factors also had an impact on the expected response rates since the historical response rate for the non-respondents at the previous wave is about 30% compared to 80% for the respondents.

The concept of an intermediate cap on calls was introduced for both RCD surveys with two goals in mind. The first goal was to ensure that cases did not reach the global cap on calls (and then be resolved and considered final and sent to head office) too soon during the collection period. The second objective was to guarantee the best usage of the last few calls before the cases reached the global cap. This was done by taking into account the characteristics and results of the previous calls.

A propensity logistic model was used to evaluate a household's likelihood of being interviewed during collection and to categorize and prioritize each in-progress case (Tabuchi et al., 2010) during the RCD Phase 1. The HES and SLID response propensity models were developed separately for each regional office using three sources of information: sample design information, paradata available prior to the collection of the last collection cycle (CCHS 2007 and SLID 2009 respectively) and paradata obtained during the last collection cycle (HES 2007 and SLID 2010. During the RCD implementation, the variables included in

the model(s) remained the same during the entire data collection period while the parameters of the model were re-evaluated daily using the most recent paradata available.

Finally, it is important to note that the objectives of the RCD were clearly defined during the planning phase since different strategies will be implemented based on these objectives. The improvement in quality in terms of response rate and sample representativity guided the RCD strategies used for both HES and SLID. Reducing costs was not a primary objective since the survey data collection budget remained the same for both surveys.

5. Highlights of the Two Surveys Used as RCD Pilots

This section summarizes the results obtained as well as the highlights from the first two RCD surveys.

5.1 Response rates, data collection effort, productivity and representativity
Table 1 indicates that both HES 2009 and SLID 2010 achieved a better response rate under RCD than their previous collection cycle (even with a higher proportion of difficult cases for both surveys).

Table 1: Response Rates and Representativity Indicators for the Previous Two Cycles of HES and SLID

Survey Cycle	HES		SLID	
	Response Rate (%)	Representativity Indicator	Response Rate** (%)	Representativity Indicator
Previous (HES 2007, SLID 2009)	72.6	0.959	71.1	0.828
Current* (HES 2009, SLID 2010)	74.1	0.970	72.2	0.821

* RCD was only used in the current survey cycle for both HES and SLID

** For SLID, the overall response rate uses generated cases (included in the Control group) which had a relatively poor response rate. These cases are excluded for all RCD and Control group comparisons

Table 2 below presents response rates, data collection effort and productivity achieved by the two surveys by group and collection phase. The response rates and productivity are not cumulative since uncompleted cases move on to the next phase.

For both surveys, the response rates are similar for the RCD group and the control group (Table 2). However, in the case of the RCD group, less collection effort (i.e. calls and system time) was necessary to achieve this comparable response rate. For example, for HES, the average number of calls per case for the RCD and control groups were 7.3 and 7.6, respectively. For SLID, the corresponding numbers were 10.6 and 10.8 (numbers not presented here). Furthermore, for both surveys, about 2% less system time was used for the RCD group than the control group.

Survey productivity is defined as the ratio of the system time devoted to the interviews themselves to the total system time including all unsuccessful and successful calls (Laflamme, 2009). For HES, the productivity of the RCD group was higher for all phases with less effort spent on the first two phases (i.e. initial and RCD Phase 1). For example, about 3% ((3,253-3,346)/3,346) less system time was allocated to the initial phase for RCD group. This could explain why the response rate for the initial phase for the RCD group is slightly lower than that obtained by the control group and not equal as one would expect. For

the SLID RCD group, productivity was also higher for all phases. However, contrary to our expectations, only RCD Phase 2 showed a better response rate. In RCD Phase 1, the RCD group had a lower response rate (22.7%) than the control group (26.0%).

Table 2: Response Rates, Effort and Productivity per Data Collection Phases
for Last Cycle of HES and SLID

	HES - 2009			SLID - 2010		
	Response Rate (%)	Effort (System Time in hours)	Productivity (%)	Response Rate (%)	Effort (System Time in hours)	Productivity (%)
Control Group (CG)	74.0	4,841	53.1	73.0	13,133	35.1
Initial	57.2	3,346	60.6	55.8	5,405	67.4
RCD phase 1	14.3	1,262	37.5	26.0	3,021	23.7
RCD phase 2	2.2	233	30.3	19.2	4,707	5.4
RCD Group	74.1	4,743	54.2	72.8	12,875	35.5
Initial	56.1	3,253	61.3	55.8	5,320	67.5
RCD phase 1	14.7	1,218	40.1	22.7	2,280	27.6
RCD phase 2	2.9	272	33.3	21.7	5,274	6.5

The difference in rates is partially due to the fact that less effort was expended on the RCD group (24.5% less system time i.e. (2,280-3,021)/3,021)) during that phase. Productivity was only marginally higher for the RCD group during the initial phase of collection, but a wider gap appeared in the RCD phases 1 and 2. This occurred for both surveys. Higher productivity was expected for the two RCD groups since less time was spent on them (about 2% less compared to the control group) and both achieved similar response rates.

Table 3: Some Statistics for In-Progress Cases at the End of Collection
for HES and SLID

End of collection - In-progress cases	HES - 2009		SLID - 2010	
	CG	RCD group	CG	RCD group
Percentage of cases	8.5%	13.3%	5.5%	6.3%
Average number of calls	12.7	15.2	18.0	20.0
Percentage of cases with 5 calls or less	24.0%	13.1%	7.6%	5.4%

Table 3 above shows the percentage of in-progress cases left at the end of collection along with their average number of calls and the proportion of these cases with 5 calls or less. These statistics are given per survey and group.

Finally, for HES cases remaining in-progress at the end of collection, about 15.2 attempts were made on average for RCD cases compared to 12.7 for CG as shown in Table 3. In particular, at the end of collection, 24.0% of in-progress cases in CG had 5 calls or less compared to 13.1% for the RCD group. This observation again suggests that the collection effort was redirected more effectively for the RCD group since similar response rates were achieved with less effort. Overall, the variability of the distribution of the number of calls was smaller for the RCD group. In other words, the CG had more cases with few attempts (5 calls or less) as well as more capped-out calls (especially for HES). Similar results were obtained for SLID but with smaller differences between the

two groups. It might be possible that data collection managers learned well after the first RCD survey.

5.2 Categorization and prioritization of cases in RCD Phase 1 and phase 2
The paradata information collected throughout the collection period (including the sequence of calls) along with the results of the response propensity models permitted the categorisation of each in-progress case in practical, meaningful and more homogeneous groups. This approach also facilitated continuing collection by assigning the grouping of cases to interviewers through the Blaise call scheduler according to interviewers' skills and profiles during data collection.

5.2.1 Global and intermediate cap on calls
The idea of an intermediate cap on calls in the RCD context was to set aside cases in the RCD group that had reached this threshold during the initial phase or the RCD Phase 1, so that the best use of the remaining calls could be made. For HES, the number of cases that reached the intermediate (20) and global (25) caps in the RCD group were respectively 10.5% and 2.9%. In comparison, for the CG, 12.5% of cases were called 20 times or more and 6.9% of cases reached the global cap of calls. Less collection effort (both in terms of average of calls (22.5 versus 23.8) and system time (163 hours versus 86 hours) was devoted on average for cases with 20 calls or more in the RCD group compared to the CG, which impacted the response rate. The response rate for the cases with 20 calls or more were 14.1% and 17.8% for the RCD and CG, respectively. However, it should be noted that the productivity was higher for the RCD group (36.7%) compared to 31.5% for the CG, suggesting that the collection effort was more efficiently used in the RCD group. However in future RCD, effort will need to be better monitored in real time in order for capped cases to progress during collection and not just at the end. Because of technical problems with SLID, the analysis of the impact of the intermediate cap on calls was compromised, and there were no findings to report.

5.2.2 High response probability groups
Table 4 shows the response rates achieved according to whether or not a case was in the high response probability group at one point in time. These rates are presented per survey, group and RCD phase.

Table 4: Response Rates for High Response Probability Group by RCD Phase

		Response rates			
		HES - 2009		SLID - 2010	
Phase	**Type of Cases**	**CG**	**RCD group**	**CG**	**RCD group**
End of RCD Phase1	Cases identified at least once in high response probability group	n/a	44.4%	n/a	37.8%
	Cases identified as regular, but not in high response probability group	39.0%	33.2%	33.9%	26.2%
End of RCD Phase 2 (End of Collection)	Cases identified at least once in high response probability group	n/a	0.0%	n/a	0.0%
	Cases identified as regular, but not in high response probability group	0.0%	0.0%	0.0%	0.0%

The RCD groups of both surveys experienced higher response rates at the end of RCD Phase 1 for cases that were identified as belonging at least once to the high response probability group (high probability of being a respondent) compared to the non high probability cases in the RCD group (i.e. other regular cases not identified as high response probability units in RCD Phase 1). During the same period, the response rate for the CG for the same type of cases (i.e. other regular cases) was lower than the high response probability RCD group for both surveys. In other words, the propensity model properly identified cases more likely to respond and placed them rightfully in the high response probability group. At the end of collection, the response rates for cases identified at least once for the high response probability group were still higher than the rates obtained for the same type of cases in the control group. For SLID, a high probability tracing group was also created. Its response rate was 14.6% compared with 10.8% for tracing cases from the control group at the end of RCD Phase 1. Again the propensity models seem to have helped identified the cases that were most likely to complete the survey.

5.2.3 Non-contact group

The final response rates for cases that did not have any contact made at the beginning of RCD Phase 1 were 36.2% for RCD and 34.2% for CG for HES, and 14% for the RCD group and 15.8% for the CG for SLID[3]. It appears that the overall benefit of separating non-contact cases into a different group was modest. However, the prior knowledge of the cases' status provides added-value to interviewers (e.g. these cases generally have a lower productivity). Further experiments and research are suggested to allow more definite conclusions about the characteristics of respondents and the most effective collection methods for these cases.

5.2.4 Special group

The goal of the special group was to revise the work as the collection progresses in the initial collection phase and the RCD Phase 1 and to identify the cases that did not receive a minimal effort and have a relatively high propensity to respond compared to other in-progress cases. In practice, each RO is required to review and call (if required) these identified cases during a short period of time (a few days). This revision happened for each RO near the end of RCD Phase 1 and before RCD Phase 2 started. It can be seen as a final check before starting the RCD Phase 2. Given the complexity of such an initiative, the evaluation of the impact of the special group was not attempted (it involved many subjective and qualitative factors such as interviewers' notes, decisions to call vs. not to call a given case, work done outside the system, etc.)

5.3 Responsive Collection Design Phase 2

While the objective of the RCD Phase 1 was to increase the overall response rate, the goal of the RCD Phase 2 was to improve the sample representativity by reducing the variability in response rates between the domains of interest. Hence the RCD groups and CG are combined during RCD Phase 2. Targeted cases that belong to domains of interest were put in priority groups during RCD Phase 2, however, all in-progress cases are still eligible to be contacted during this last phase. As for the RCD Phase 1, key indicators were closely monitored as well as the sample representativity indicator. For the two RCD

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[3] The RCD non-contact group for SLID received 12% less effort in terms of system time than the non-contact cases in the control group.

pilots, the representativity indicator [4] was mainly used as a qualitative indicator to evaluate the trend of sample representativity during the entire data collection period. It was also used to compare results with the previous survey cycle. For example, there was less variability among response rates in domains of interest in HES 2009 when comparing with HES 2009. To achieve this, during the RCD Phase 2, about 16% more system time was devoted to the RCD group than the control group. For SLID, the results were not as clear cut: there was an improvement in several regional offices, but representativity deteriorated somewhat at the national level. It is possible that some features of a longitudinal survey, such as differential attrition rates, may make it more difficult to maintain representativity over time. Further work using SLID data is needed to test this conjecture. Finally, RCD Phase 2 should not be initiated too late during data collection in order to provide some flexibility and time to improve sample representativity.

6. Lessons Learned

This section summarizes the lessons drawn from the first two surveys used as pilot to test the RCD strategy.

RCD feasibility

The RCD concept for CATI surveys can be successfully implemented and is viable from an operational point of view. The RCD strategy used for SLID was slightly modified to take advantage of the lessons learned in the first RCD study and to respond to its specific needs. It should be noted that SLID is one of Statistics Canada's most complex CATI surveys and yet it was still possible to use RCD effectively. For example, the prioritization and categorization of cases under the RCD (e.g. high response probability group for regular cases, and high response probability – tracing for cases requiring tracing during RCD Phase 1) had a positive impact on response rates, i.e. the propensity models have properly identified cases that were more likely to respond.

From a conceptual standpoint, it is essential to go through several thought processes during the planning phase before implementing an RCD. For example, when paradata from previous data collection cycle (or paradata for similar surveys) are available, simulations can be used to test the strategy and RCD active management programs. The different thresholds required to determine when to initiate RCD phases can be identified. It is also necessary to identify all the specificities of the survey, to incorporate them into the process if necessary and to thoroughly test all the modifications with their impact on the process. For future RCD surveys, the sample will no longer be split into two groups (i.e. RCD and CG). This will ease data collection management in the regional offices. However, this approach does not prevent the implementation and analysis of embedded experiments. For example, SLID 2011 will use the RCD approach on the entire sample and test a new initiative on a portion of the SLID 2010 respondents. For this sub-sample of cases, the first call will be made in the same time slice (period of time) where the SLID 2010 interview was conducted. The goal is to increase to probability of reaching the respondent on the first call.

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[4] It was the first time that such an indicator was used to monitor sample representativity at Statistics Canada.

Active management
In an RCD context, active management has two main objectives: to provide timely information on survey progress and performance and to decide when is the right moment to initiate RCD phases during collection. The pilots clearly demonstrated that the active management strategy in place was able to meet these two objectives and even more. However, these two surveys also revealed some issues for the implementation of future RCD strategies. For example, one of the main challenges for active management is to produce relevant and manageable reports that can be easily used during collection and to avoid overwhelming data collection managers with massive and detailed amount of information. The right balance between the amount of information and level of detail needed to manage RCD and the amount of effort required by data collection managers to analyse it also needs to be determined. The information required for monitoring, managing, and analysing the results also need to be better identified. Some analytical information can be seen as "good to know information" that is often only required at the end of collection. After a few experiences, it will be possible to simplify the process by streamlining it and by identifying the proper frequency and amount of information required to monitor and manage actively an RCD. Finally, the availability and accessibility of timely paradata information that allows the evaluation of survey progress through key indicators is critical to the development and implementation of a relevant active management strategy. Without this information, it is almost impossible to build an effective active management strategy which is the heart of any RCD strategy.

Communication
The HES and SLID experiences clearly highlighted the importance of planning and implementing an efficient communication plan. Since an RCD project is a multidisciplinary team effort that uses an extensive collaborative approach, all parties involved in collection (e.g. subject matter experts, expert methodologists, collection managers in head office and regional offices) had to maintain ongoing communication to identify collection issues and agree on any changes to collection strategies in a timely manner. Some technical issues also arose and regular discussions with the various team members were necessary in order to find solutions and assess their impact. Finally, ongoing communication was essential to discuss how well new collection strategies performed and whether any further adjustments were required.

Staff knowledge
One of the main RCD challenges is to produce relevant, customized, and manageable reports that can be easily analyzed and used by the multidisciplinary team at different points in time during collection. For HES and SLID, many new key indicators and monitoring tools and reports were used to provide all necessary information to manage RCD collection. Analysing this information requires new analytical skills that will need to be developed and maintained. This experience demonstrated the need to factor in additional training to support and use the more elaborate active management tools that are an integral part of RCD. At the same time, the information produced for active management needs to be summarized and simplified (if possible) to prevent project team (especially the collection managers) from being overcome by a massive amount of information. Transition of knowledge from expert methodologists to survey methodologists and other experts should also occur.

Technical aspects
Overall, the technical feasibility of an RCD for CATI surveys is no longer in question. As with any CATI survey, an RCD application should be thoroughly tested before the start of collection in order to resolve most of the technical anomalies. It is necessary to remain

proactive and on the lookout for other problems that may arise. Fortunately, technical problems in both surveys were very often detected as they arose during the analysis of RCD active management reports. RCD phase initiations, updates and any necessary corrective actions are generally released the day before by head office using overnight jobs. Thus, changes made were almost transparent for the regional offices except for the interviewer assignment required for each group. The distribution of the cases among the Blaise groups can change significantly after the initiation of a new phase, especially between initial phase and RCD Phase 1.

Interviewer staffing assignment between phases

With the many groups generated by RCD, it is important to foresee the interview efforts that will be required for each Blaise group in order to balance interviewer staff assignment and effort especially when a new phase and new groupings were initiated. To that extent, a tool has been developed to simulate the distribution of the in-progress cases (and to assess the expected productivity of each group) according to the new groupings to provide guidelines for next day planning of the assignment of interviewers (i.e. data collection effort) between the various groups. These guidelines have to be adapted by each regional office according to their operational constraints (monthly planning of staff by some) and capacity (limited number of tracing or refusal interviewers). The information was very important prior to the initiation of a new phase in order for regional managers to plan and maximize the allocation of interviewers.

7. Conclusion

The RCD pilots were a very important step in the development and implementation of a more flexible and efficient data collection strategy for CATI surveys at Statistics Canada. These experiments were also very useful for assessing the RCD impact on collection, improving active management tools (including tools to determine when to initiate RCD phases), developing staff analytical skills and learning how to adjust the RCD strategy for other CATI surveys. Even though a large amount of time and resources were required to implement the first pilot, in the long run, the expected benefits of a RCD approach can be numerous (e.g. improved collection monitoring and management, improved productivity, improved communication flow between various partners, potential to maintain and/or increase response rates, potential to increase data quality, etc.).

Since a number of learning processes are required for the effective implementation of an RCD, the planning phase is critical to ensure success. For example, the objective(s) of the RCD have to be defined to determine which aspects of collection will be emphasized. Will it be the improvement of quality, reduction of survey cost or both? The answer will greatly influence how the collection will be conducted and managed. It is improvement of quality (i.e. response rate and sample representativity) and not the survey cost, that guided the first two RCD pilots. The paradata information required for monitoring, managing and analysing the results also needs to be identified and the resulting active management information has to be streamlined to prevent overwhelming data collection managers. The availability and accessibility to timely paradata information is critical to any RCD. Without this information, it is almost impossible to build an effective active management strategy.

Future investigations and development are still required to improve the current RCD strategy. The rules to determine the initiation of phases can be optimized (e.g. number of rules, threshold values). It might be possible to investigate a more dynamic phase-in

approach (in particular between the initial phase and RCD Phase 1) in which no contact and high response probability groups are gradually populate as survey progress to smooth the transition. Quality could be further improved if survey estimates, when design weights are available, were incorporated into the monitoring to help identify domains requiring more effort. The creation of other groups for RCD Phase 1 could also be beneficial if the new groups target a special subpopulation or if they require special interviewing knowledge. Whether the monitoring of the representativity indicator or the improvements to the propensity model have an impact on survey estimates and variance needs to be assessed.

The next RCD survey is being conducted in 2011. SLID 2011 uses full RCD with no control group. In RCD Phase 1, more groups are being monitored with the addition of a high probability refusal group along with another group for cases that ended in tracing during the 2010 collection. As mentioned earlier on, an experiment is being embedded into the SLID 2011 RCD collection. The idea to be tested is that respondents are more likely to respond within the same time slice as done previously.

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