

**Washington Citizens for Resource
Conservation (WCRC)**

a

SoundStats™

Report

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CONTACT:

Kelly Baumeister

400 – 108th Ave NE, Suite 200

Bellevue, WA 98004

P. (425) 635-7481

F. (425) 635-7482

kelly@nwr.org

SUBMITTED BY:

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I. Project Overview

Background & Objectives

Washington Citizens for Resource Conservation (WCRC) contracted with Northwest Research Group, Inc. to gain a greater understanding of residents’:

- ~ Current disposal practices of unused or expired medicines;
- ~ Estimate of how many medicines are currently stored in their household and what proportion are currently being used or are planning to use;
- ~ Willingness to properly dispose of unused or expired medicines;
- ~ Opinion on the most convenient method to properly dispose of medicines and likelihood to dispose of medicines at the pharmacy;
- ~ Level of agreement regarding medicine manufactures’ responsibility in offering a safe and convenient disposal solution.

This study made use of NWRG’s SoundStats™ research program. SoundStats™ is a regularly scheduled omnibus survey conducted in three states (Idaho, Oregon, and Washington) and in three major markets within each state (the Treasure Valley, Portland Metro, and Puget Sound Metro). Participating clients share interviewing and other fixed costs of the research, asking a minimum of five questions which are combined for analysis with 13 standard demographic questions.

Questionnaire Design

The questionnaire was designed by Cunningham Environmental Consulting in consultation with WCRC and NWRG. The customized questions included in the SoundStats™ survey instrument addressed the key areas identified above. In addition, the questionnaire consisted of 13 standard demographic questions.

The questionnaire used a variety of question formats, including closed single- and multiple-response questions for all categorical data. In situations where not all potential responses could be anticipated, an “other” category was included. These results were then reviewed and, where appropriate, post-coded into the database.

The survey was administered using computer-assisted telephone interviewing technology. The computer program automatically handled all skip and branching patterns. A copy of WCRC’s customized questions is included in the Appendix.

Sampling

The SoundStats™ research program utilized by WCRC is based on a sample of 400 households in King County. The sample is drawn and administered using strict random digit dialing (RDD) sampling procedures, reaching both listed and unlisted telephone numbers. Telephone data collection using RDD sampling continues to be the best sampling and data collection methodology for conducting research that needs to be projected to the general population.

Interviews were completed with a randomly selected male or female in the household, 18 years of age or older. As women are more likely to complete telephone surveys than men, quotas were established to ensure that an equal number of males and females were interviewed.

A random sample of King County numbers, screened for disconnected numbers, was ordered from Survey Sampling International to ensure 400 completed interviews within the county.

Interviews were conducted between January 6 and January 15, 2005. NWRG conducted interviews daily until 9:00 p.m. and during the afternoon and early evening hours on weekends. Each sample element was attempted up to seven times to maximize the extent to which the sample represents the population. This method ensures that each household has a known probability of being selected for an interview.

Weighting

Northwest Research Group completed a total of 401 interviews among King County residents 18 years of age or older. Weights were applied to the data set to provide an estimate of the number of people in the population that are being spoken for by a particular respondent. In addition, weights were applied to the data to correctly identify a respondent's probability of selection into the sample.

The RDD frame has undergone dynamic change during the 1990's. These changes have presented RDD methodologists with a set of new and different challenges from those faced only five years ago. Specifically:

Addressing the implications of the increasing number of households with two or more telephone numbers. Current estimates are that 25% of households have more than one line, but that number has been growing dramatically. The basic premise of sampling is that each household has an equal and known probability of being selected. Households with multiple telephone lines violate this principle as they have a greater probability of being selected than do single-line households. In addition, households with multiple telephone lines are typically more affluent than single-line households, introducing a potential bias into the sample itself as more affluent households then have a greater probability of being represented in the sample.

Northwest Research Group determines the probabilities of selection by screening for the number of phone lines in a household and the likelihood of answering them. A weight is then applied to the data to adjust for those households with multiple telephone lines.

Given that telephone sampling often leads to age distributions that do not match the known population, estimates (from the 2000 census data) for the age groups 18 to 24, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65 and above were used both for males and females to adjust for varying levels of non-response within each age group. The number of interviews obtained and the number resulting from the weighting process are shown in the following table.

Age	Male		Female	
	Obtained	Weighted	Obtained	Weighted
18 to 24	10	17	15	16
25 to 34	34	41	30	43
35 to 44	34	46	36	47
45 to 54	37	41	46	42
55 to 64	39	28	32	25
65 +	32	22	53	30
Total	186	195	212	203

**Note: The totals obtained and weighted are less than 401 due to 3 respondents refusing to answer their age. In addition, weighted totals differ from obtained totals due to rounding.*

All results in this report are based on the weighted sample data. Weighted cell sizes are shown. Unweighted cell sizes; however, are used when inferring statistical reliability.

Final Interviewing Outcomes

Declining response rates resulting from the inability to reach households with targeted respondents at home and increasing refusal rates are of significant concern in telephone survey research. Strict calling procedures are used to maximize response rates including:

- ~ Drawing and loading sample in replicates, a replica subset of the entire sample. In other words, the sample that is randomly drawn from the sampling frame is systematically divided into smaller groups that are each representative of the population. Each replicate, or sub-sample, is dialed in sequential order to maintain the integrity of the parent sample. This prevents any selection bias that could occur should sampling quotas fill before the entire sample is dialed.
- ~ Scheduling call-back interviews as required to complete surveys at a convenient time.
- ~ Re-contacting individuals who initially refused to complete the survey at an alternative time to determine their willingness to complete. Note the majority of initial refusals to surveys occur prior to hearing the introduction. Moreover, the person answering the phone may not be the individual in the household scheduled to be interviewed.
- ~ Calling back households who do not answer or have busy numbers up to seven times to maximize contact rates.

The response rate for the WCRC Survey based on 2004 AAPOR (American Association for Public Opinion Research) formula is 30 percent. Of those reached, only 17 percent refused to complete the survey. This is significantly lower than the national average for RDD samples where the refusal rate is as high as 40 percent.

How to Use This Report

Report Format

This report summarizes the major findings for each of the topics and provides an overview of respondents' practices and opinions on proper disposal of unused and expired medicines – as a whole as well as segmented by key subgroups.

The following notes describe the reporting conventions used in the report.

- ~ The report is organized by major topic area. Tables and charts provide supporting data.
- ~ Information about the overall results for each topic area is presented first, followed by relevant, statistically and practically significant differences between key subgroups. The probability level for determining statistical significance is $< .05$ (unless otherwise noted). When significant differences (assuming a 95 percent confidence level) were observed among important segments (e.g., age, income, gender, etc.), they were noted in the written text of the report and boldfaced in the accompanying tables.
- ~ In most charts and tables, unless otherwise noted, column percents are used. Percents are rounded to the nearest whole number. Note that some percentages in this report may add up to more or less than 100 percent because of rounding; the permissibility of multiple responses for specific questions, or the presentation of abbreviated data.
- ~ Except where noted, tables and charts provide information from respondents who offered opinions to a question. “Don’t know” and “Refused” are counted as missing values unless “Don’t know” is a valid or meaningful response.
- ~ Complete documentation of the data analysis (in the form of banners) is kept separately. These banners are useful in providing easy-to-use documentation of the results of all questions broken out for important subgroups. One set of banners was created providing insight into how important subgroups responded to each question.

Statistical Significance

While interpreting survey results, readers should keep in mind that all surveys are subject to sampling error. Sampling error is the extent to which the results may differ from what would be obtained if the whole population were surveyed. The size of such sampling error depends on the number of interviews completed. As the sample size increases, the sampling error decreases.

The overall margin of sampling error for this survey for questions asked of all respondents is plus or minus 5 percent. For example, if we asked a question of all respondents ($n=401$) and 50 percent gave a specific response, the error associated with that 50 percent is plus or minus 5 percent. That is, if you repeated the survey, you could expect this same response to be from 45 percent to 55 percent. The following table illustrates the error associated with different proportions at different sample sizes and can be used to determine sampling error for subgroups.

The error associated with the estimates in this survey varies by the estimate itself and the sample size. The overall margin of sampling error associated with this survey is about 5 percentage points.

ERROR ASSOCIATED WITH DIFFERENT PROPORTIONS AT DIFFERENT SAMPLE SIZES AT THE 95% CONFIDENCE LEVEL

Sample Size	Estimate					
	10% / 90%	20% / 80%	30% / 70%	40% / 60%	50% / 50%	
50	8.3%	11.1%	12.7%	13.6%	13.9%	
100	5.9%	7.8%	9.0%	9.6%	9.8%	
200	4.2%	5.5%	6.4%	6.8%	6.9%	
300	3.4%	4.5%	5.2%	5.5%	5.7%	
400	2.9%	3.9%	4.5%	4.8%	4.9%	
600	2.4%	3.2%	3.7%	3.9%	4.0%	
800	2.1%	2.8%	3.2%	3.4%	3.5%	
1000	1.9%	2.5%	2.8%	3.0%	3.1%	
1200	1.7%	2.3%	2.6%	2.8	2.8%	

Throughout this report differences between key groups are reported. If a particular difference is large enough to be unlikely to have occurred due to chance or sampling error, then the difference is deemed statistically significant.

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II. Findings

Respondent Characteristics

In order to further analyze the data, several key demographic questions were asked of respondents. This information aids in determining the representativeness of the final sample by comparing this information with current census figures. Moreover, these questions provide additional opportunity for analysis or sub-segment analysis.

- ~ Age and gender distributions match current Census data for King County as a result of the weighting process.
- ~ The average number of persons per household is 2.61 – one in four (24%) respondents report they are the only person in their home, one in three (34%) have two people and forty-two percent (42%) report there are three or more people living in their household.
- ~ More than one in three (36%) respondents state they have at least one child under the age of 18 living in the household.
- ~ One in three (33%) respondents have completed some college or receive an Associate degree while slightly fewer (29%) have received a four-year college degree. More than one in four (27%) have completed some graduate school or obtained their Graduate degree. Twelve percent (12%) of respondents have a high school diploma or less.
- ~ The median income of respondents is \$64,943, with 37 percent reporting incomes in the \$50,000 to \$100,000 range.

Table 1: Respondent Characteristics

The sample is representative of the population in the King County.	Overall (n=401)	
	Age	
	18 to 34 years	29%
	35 to 54 years	44
	55 to 64 years	13
	65 or older	13
	Mean	44.8 years old
	Gender	
	Male	49%
	Female	51
	Household Size	
	One	24%
	Two	34
	Three or More	42
	Mean	2.61 people
	Children Under 18 in HH	
	Yes	36%
	No	64
	Education	
	High School Diploma or Less	12%
	Some College / Associates	33
	College Degree	29
	Some Graduate / Graduate Degree	27
	Income	
	Less than \$30K	16%
\$30K to \$50K	20	
\$50K to \$100K	37	
\$100K or more	27	
Median	\$64,943	
Employment Status		
Employed	71%	
Not Employed	29	

Disposal of Unused and Expired Medicines

All respondents (n=401) were asked:

How does your household typically get rid of unused or expired medicines?

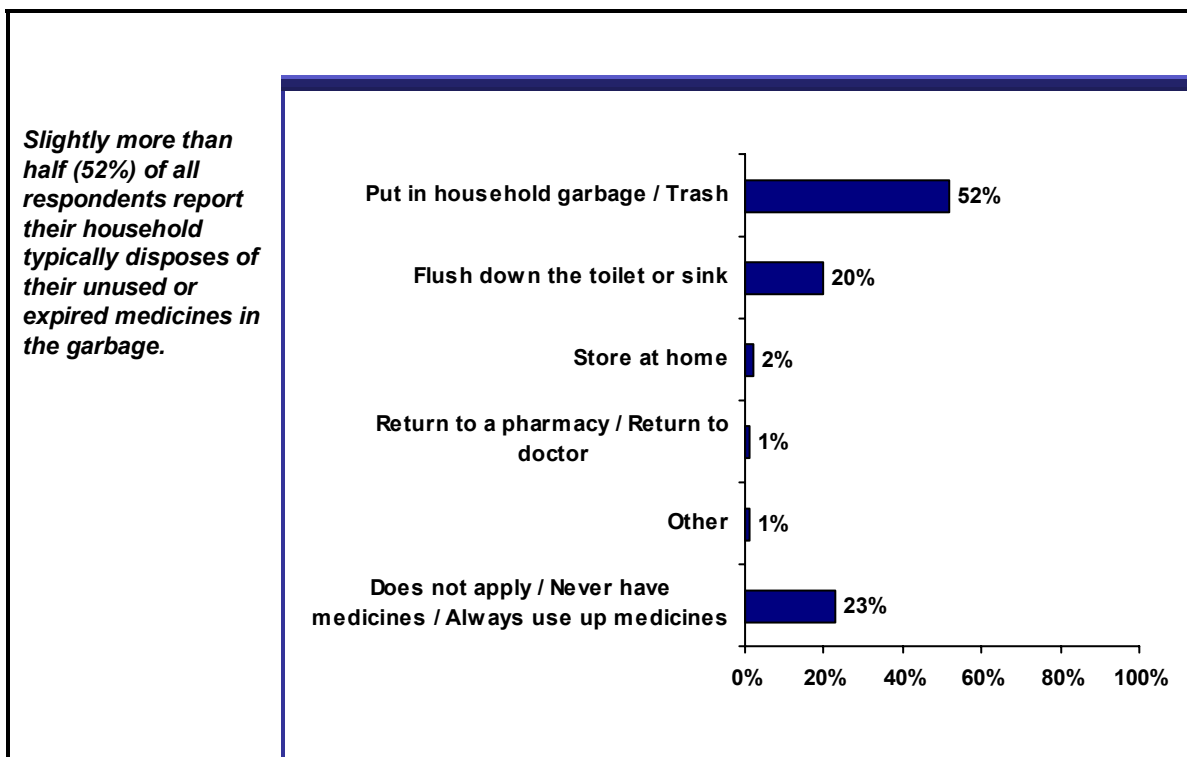
Slightly more than half (52%) of all respondents report their household typically disposes of their unused or expired medicines in the garbage. One in five (20%) flush their unused medicines down the toilet or sink while only two percent (2%) store them in their home and one percent (1%) return the medicine to the pharmacy or doctor.

Nearly one in four (23%) report they either never have medicines in their home or they always use up their medicines so there is no need for disposal.

- ~ Respondents aged 18 to 54 (56%) are significantly more likely than their older counterparts (41% of those aged 55 and older) to report they dispose of their unused medicines in the trash. However, respondents aged 55 and older (31%) are significantly more likely than those aged 18 to 54 (17%) to flush unused medicines down the sink or toilet.
- ~ Respondents with annual household income over 50K (62%) are significantly more likely to get rid of medicines in the garbage than households with income below 50K (40%).
- ~ Households without children (27%) are more likely to either never have medicines or always use them up, compared to households with children (16%).

Figure 1: Method for Disposing Unused / Expired Medicines

(BASE = All Respondents)



Number of Medicine Containers in Household

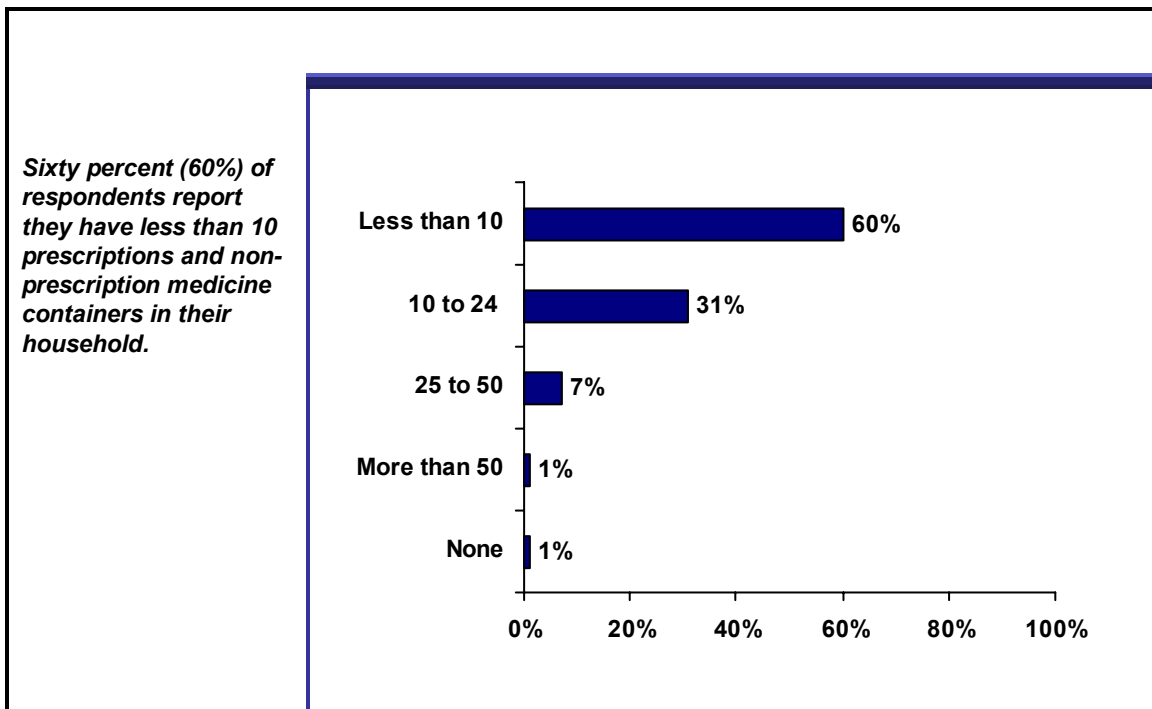
All respondents were asked:

Picturing all the places in your house where you keep medicines, what is your best estimate of the total number of containers of prescription and non-prescription medicines?

Sixty percent (60%) of respondents report they have less than 10 prescriptions and non-prescription medicine containers in their household. Nearly one in three (31%) state they currently have between 10 to 24 medicine containers in their home and seven percent (7%) have 25 to 50 containers. Only one percent report they have more than 50 containers (1%) or no medicine containers at all (1%) within their household.

- ~ Households with no children under the age of 18 are significantly more likely than those with children to state they have less than 10 medicines containers in their home (64% compared to 53%, respectively).
- ~ In addition, households with only one member (71%) are significantly more likely than those with three or more members (52%) to have less than 10 containers in their home.
- ~ Respondents ages 55-64 (41%) are more likely to have more medicine containers (10 to 24) than their counterparts under the age of 55 (28%) or above the age of 65 (31%).
- ~ Larger households (3 or more persons) (11%) are more likely to have more medicine containers (25 to 50) in their home than households with one or two persons (4%).

Figure 2: Number of Medicine Containers in Household
(BASE = All Respondents)



Proportion of Medicines Actively Using

Respondents who report they have prescription and/or non-prescription medicine containers in their home (n=397) were asked:

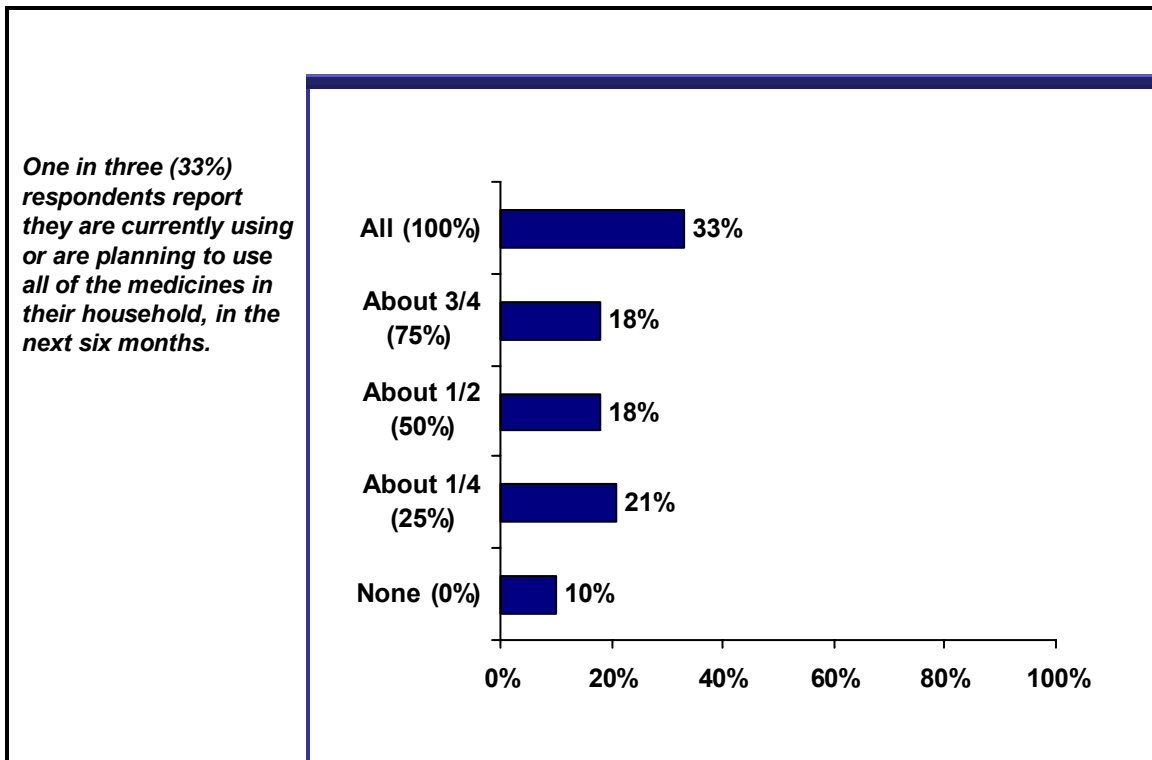
Approximately what proportion of all the medicines in your home are household members actively using or planning to use in the next six months?

One in three (33%) respondents report they are currently using or are planning to use in the next six months all of the medicines in their household. Eighteen percent are using or planning to use about three-fourths of their medicines (18%) or about half of their medicines (18%). One in five (21%) are currently using or plan to use one-quarter of their medicines and ten percent (10%) are using or will use none.

- ~ Significantly more respondents ages 65 and older (60%) compared to those ages 18 to 64 (30%) report they are currently using or are planning to use all of their medicines in their home.
- ~ Respondents with no children in the home (41%) compared to those with children (20%) and respondents with one (46%) or two (37%) members in their household compared to those with three or more members (24%) are significantly more likely to report they are currently using or plan to use all of the medicines in their home.

Figure 3: Proportion of Medicines Actively Using or Plan to Use

(BASE = Currently Have Medicine Containers in the Household)



Willingness to Properly Dispose of Medicines

All respondents were asked:

If there was a convenient location, how willing would you or a household member be to return unused or expired medicines for proper disposal?

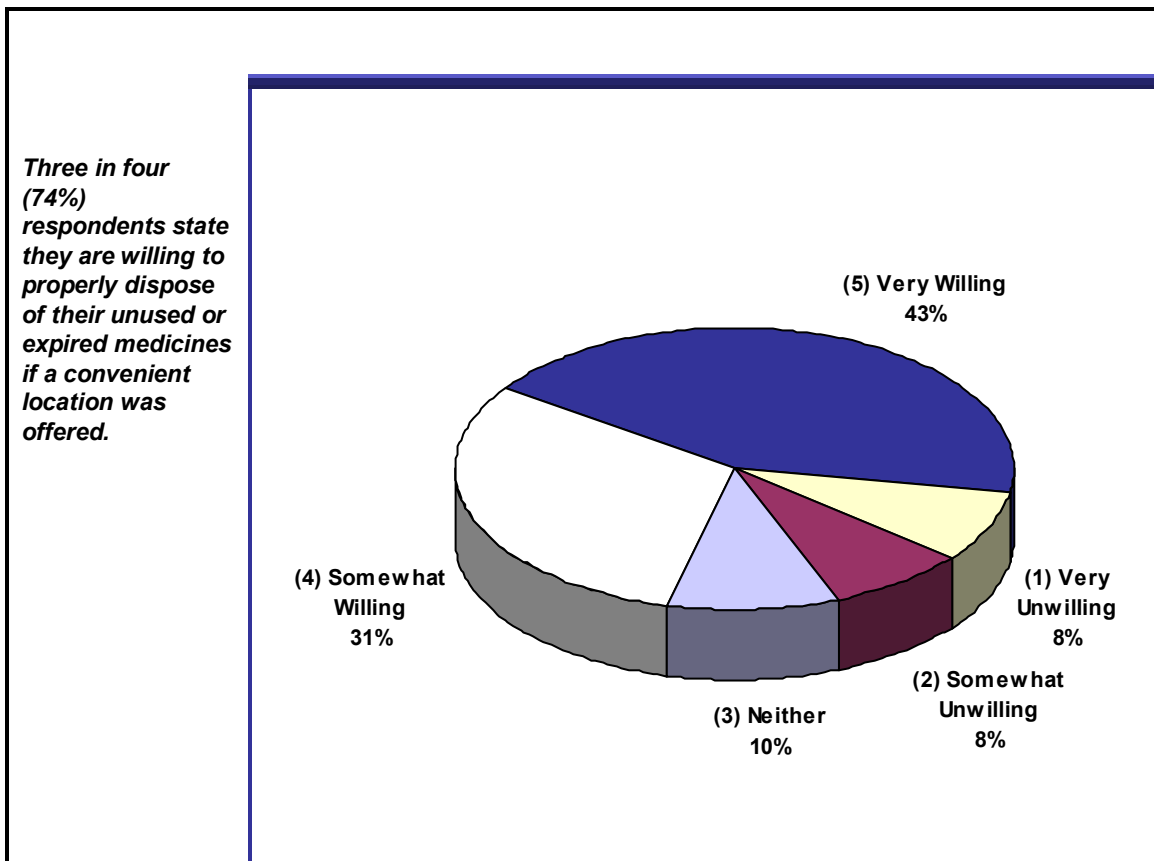
Three in four (74%) respondents state they are willing to properly dispose of their unused or expired medicines if there was a convenient location to do so – 43% are *very willing* and 31% are *somewhat willing*.

Fifteen percent (15%) report they are not willing to properly dispose of medicines if there was a convenient location – 8% are *somewhat unwilling* and 8% are *very unwilling*.

- ~ Respondents ages 18 to 64 are significantly more likely than their older counterparts to state they are *somewhat* or *very willing* to properly dispose of their medicines if a convenient location were offered (76% compared to 55% of those ages 65 and older).

Figure 4: Willingness to Properly Dispose of Medicines

(BASE = All Respondents)



Most Convenient Location to Return Medicines

All respondents were asked to indicate:

Which of the following would be most convenient for you to return your unused or expired medicines?

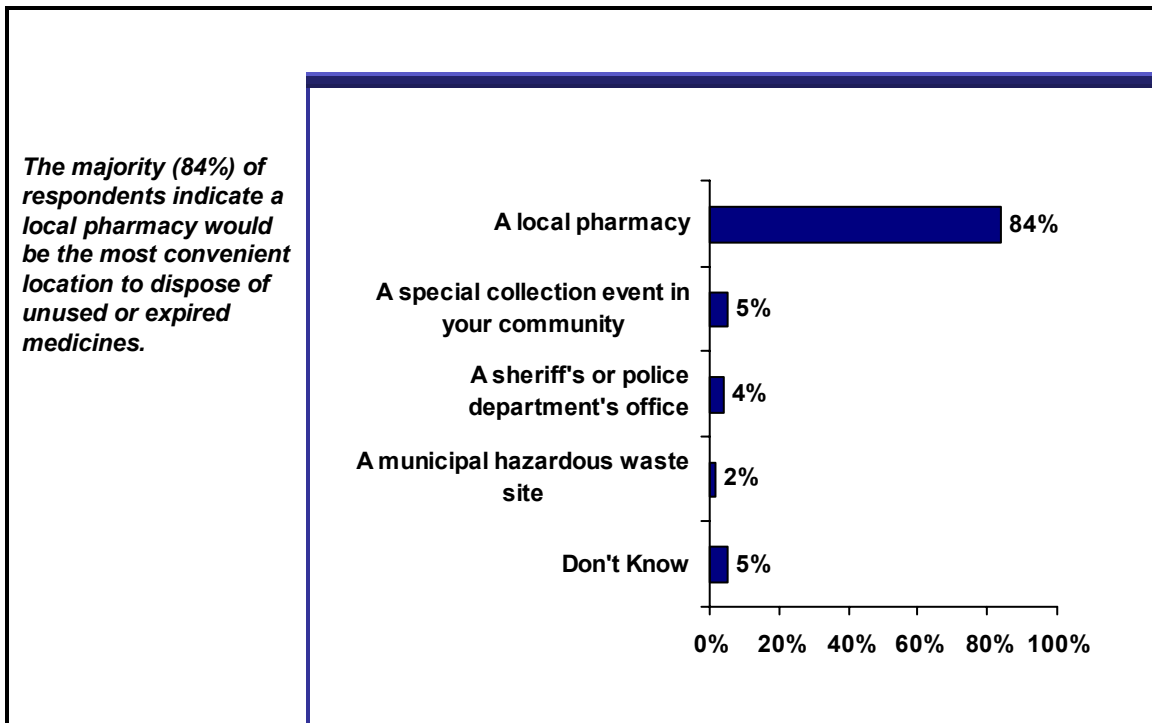
The majority (84%) of respondents indicate a local pharmacy would be the most convenient location to dispose of unused or expired medicines.

Five percent (5%) feel a special collection event in the community would be the most convenient way to dispose of medicines, while four percent (4%) state a sheriff's or police department's office and two percent (2%) say a municipal hazardous waste site would be convenient.

Five percent (5%) of all respondents state they don't know which methods would be the most convenient way to dispose of medicines – stated significantly more often by respondents age 65 and older (17% compared to 3% of those ages 18 to 64).

Figure 5: Most Convenient Location to Return Medicines

(BASE = All Respondents)



Likelihood to Return Medicines to a Pharmacy

All respondents were asked:

If a secure drop box were set up at your pharmacy, how likely would you or a household member be to return unused or expired medicines?

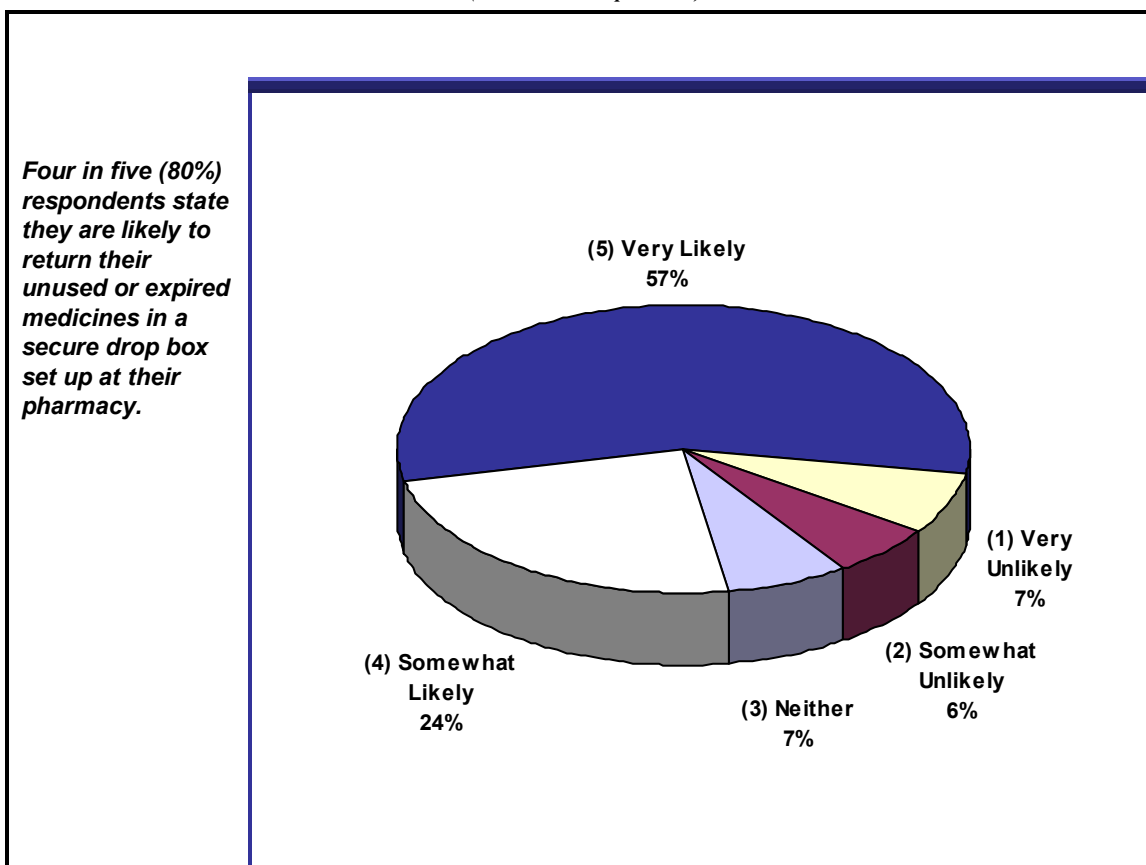
Four in five (80%) respondents state they are likely to return their unused or expired medicines in a secure drop box set up at their pharmacy – 57% state they are *very likely* and 24% are *somewhat likely*.

Twelve percent (12%) indicate they would be unlikely to return medicines at their pharmacy – 6% are *somewhat unlikely* and 7% are *very unlikely*.

~ Significantly more women (85%) than men (76%) indicate they are *somewhat* or *very likely* to return unused or expired medicine to a drop box set up at their pharmacy.

Figure 6: Likelihood to Return Medicines to a Pharmacy

(BASE = All Respondents)



Agreement to Manufacturers Offering Disposal Solution

All respondents were asked to indicate:

How much do you agree or disagree with the following statement...?

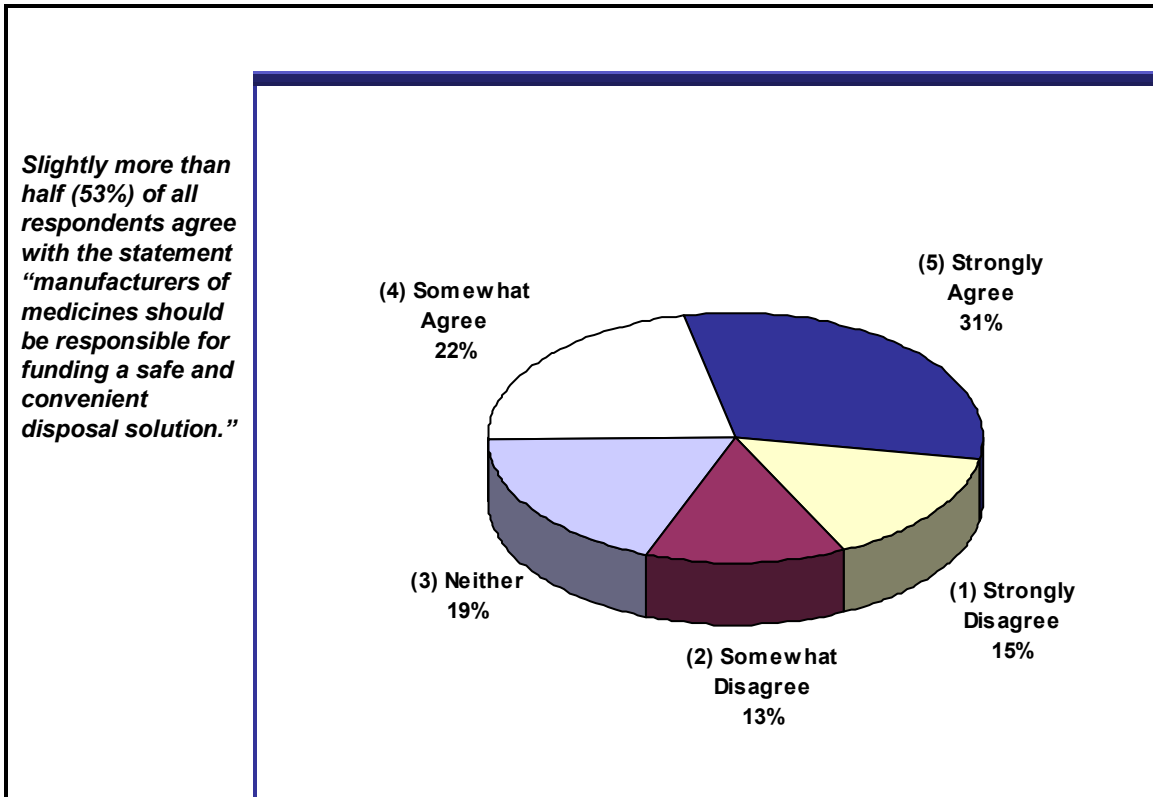
Manufacturers of medicines should be responsible for funding a safe and convenient disposal solution.

Slightly more than half (53%) of all respondents agree with the statement “manufactures of medicines should be responsible for funding a safe and convenient disposal solution.” – 31% *strongly agree* and 22% *somewhat agree* with this statement.

More than one in four (28%) respondents disagree that manufactures of medicines should be responsible for funding disposal solutions – 13% *somewhat disagree* and 15% *strongly disagree* with this statement.

- ~ Women are significantly more likely than men to *somewhat* or *strongly agree* that manufactures should be responsible for funding medicine disposal solutions (59% compared to 46%, respectively).
- ~ Respondents ages 35 to 54 (35%) and 55 to 64 (32%) are significantly more likely than their younger counterparts ages 18 to 34 (18%) to *somewhat* or *strongly disagree* with the statement.
- ~ Respondents who are willing to properly dispose of medicines (36% vs. 14% of those unwilling) and respondent who have 25 or more medicine containers in their home (45% vs. 23% of those with 10 to 24 containers) are significantly more likely to *somewhat* or *strongly agree* with this statement.
- ~ Respondents over age 35 (19%) are more likely than their younger counterparts ages 18 to 34 (3%) to strongly disagree with this statement.
- ~ Respondents with higher household annual incomes (100K+) (37%) are more likely to *somewhat* or *strongly disagree* with this statement than respondents with annual incomes less than 100K (22%)

Figure 7: Agreement to Medicine Manufacturers Offering Disposal Solution
(BASE = All Respondents)



III. Appendix

Questionnaire

WCRCint The next questions are about medications in your home. When answering the questions, consider all prescription and non-prescription medicines used by all members of your household.

Q1 How does your household typically get rid of unused or expired medicines?

[SELECT ONLY ONE]

[IF MORE THAN ONE ASK: "Which one do you use the most?"]

[DO NOT READ OPTIONS]

- 1 PUT IN HOUSEHOLD GARBAGE / TRASH
- 2 FLUSH DOWN THE TOILET OR SINK
- 3 GIVE TO SOMEONE ELSE WHO WOULD USE THEM
- 4 RETURN TO A PHARMACY / **RETURN TO DOCTOR**
- 5 STORE AT HOME
- 6 OTHER **[SPECIFY]**
- 7 DOES NOT APPLY / NEVER HAVE MEDICINES / ALWAYS USE UP MEDICINES
- 8 DON'T KNOW
- 9 REFUSED

Q2 Picturing all the places in your house where you keep medicines, what is your best estimate of the total number of containers of prescription and non-prescription medicines?

[READ RESPONSES]

- 1 Less than 10
- 2 10 to 24
- 3 25 to 50
- 4 More than 50
- 5 NONE **[SKIP TO Q4]**
- 8 DON'T KNOW **[SKIP TO Q4]**
- 9 REFUSED **[SKIP TO Q4]**

Q3 **[ASK IF Q2 < 5]** Approximately what proportion of all the medicines in your home are household members actively using or planning to use in the next six months?

[READ RESPONSES]

- 1 All (100%)
- 2 About $\frac{3}{4}$ (75%)
- 3 About $\frac{1}{2}$ (50%)
- 4 About $\frac{1}{4}$ (25%)
- 5 None (0%)
- 8 DON'T KNOW
- 9 REFUSED

Q4 If there was a convenient location, how willing would you or a household member be to return unused or expired medicines for proper disposal? Would you be willing, unwilling, or neither? Would that be somewhat or very (willing / unwilling)?

- 1 VERY UNWILLING
- 2 SOMEWHAT UNWILLING
- 3 NEITHER WILLING NOR UNWILLING
- 4 SOMEWHAT WILLING
- 5 VERY WILLING
- 8 DON'T KNOW
- 9 REFUSED

Q5 Which of the following would be most convenient for you to return your unused or expired medicines?

[READ ALL OPTIONS – SELECT ONE RESPONSE]

[ROTATE OPTIONS 1 TO 4]

- 1 A municipal hazardous waste site
- 2 A sheriff's or police department's office
- 3 A local pharmacy
- 4 A special collection event in your community
- 8 DON'T KNOW
- 9 REFUSED

Q6 If a secure drop box were set up at your pharmacy, how likely would you or a household member be to return unused or expired medicines? Would you be likely, unlikely, or neither? Would that be somewhat or very (likely / unlikely)?

- 1 VERY UNLIKELY
- 2 SOMEWHAT UNLIKELY
- 3 NEITHER LIKELY NOR UNLIKELY
- 4 SOMEWHAT LIKELY
- 5 VERY LIKELY
- 8 DON'T KNOW
- 9 REFUSED

Q7 How much do you agree or disagree with the following statement...?

Manufacturers of medicines should be responsible for funding a safe and convenient disposal solution.

Would you say you agree, disagree, or neither with this statement? Would that be somewhat or strongly (agree / disagree)?

- 1 STRONGLY DISAGREE
- 2 SOMEWHAT DISAGREE
- 3 NEITHER AGREE NOR DISAGREE
- 4 SOMEWHAT AGREE
- 5 STRONGLY AGREE
- 8 DON'T KNOW
- 9 REFUSED

Verbatim Responses

Q1 – How does your household typically get rid of unused or expired medicines?

RESP	QUEST	NEW CODE	ORIG CODE	Verbatim Response
263	Q1	2	6	Down garbage disposal and toss the bottles in the garbage.
238	Q1	4	6	Take them to your doctor.
281	Q1	4	6	Take them back to the doctor.
311	Q1	4	6	Medical staff takes care of it.
177	Q1	5	6	In the basement.
168	Q1	6	6	Give to the free clinic.
189	Q1	6	6	Give them to charity.
441	Q1	6	6	Burn in fireplace.
109	Q1	7	6	I finish it.
237	Q1	7	6	They usually just get used. I don't throw away medicines.
270	Q1	7	6	We use them all.
273	Q1	7	6	Usually don't run out.
279	Q1	7	6	Don't dispose of them.