Domestic Water Well Practices and Policies in Kansas

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Funding

- Improving Public Health through Access to and Consumption of Water Grant

- Kansas Health Foundation

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Introduction

- Approximately 1 in 6 US households rely on private water supplies, such as wells, for drinking water.[1]
- There are approximately 69,000 water wells in Kansas used for drinking.[2]
- There are an estimated 400,000 Kansans relying on domestic water wells.[3]

Protections for Domestic Water Wells

- Regulations to protect public water supplies such as the Safe Drinking Water Act do not apply to domestic water wells.[4-5]

- The groundwater that these private water supplies are drawn from are susceptible to threats ranging from nitrates to bacteria to chemicals such as pesticides and solvents.[6-8]

Protections for Domestic Water Wells

- Despite the vulnerability of private water supplies, just one state requires sampling of private water supplies at the time of resale.[9]

- Studies in Pennsylvania, Wisconsin, and the USGS have revealed contamination from at least one substance in 38% to 47% of domestic water wells.[10-12]

- There are minimal protections in place for domestic water well owners to protect their own wells from an array of potential contaminants.

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Purpose

This project seeks to

identify public health policies within the state of Kansas that protect domestic water well users

and

to **identify best practices** across Kansas and the nation that protect water well users from exposure to pathogens or chemicals

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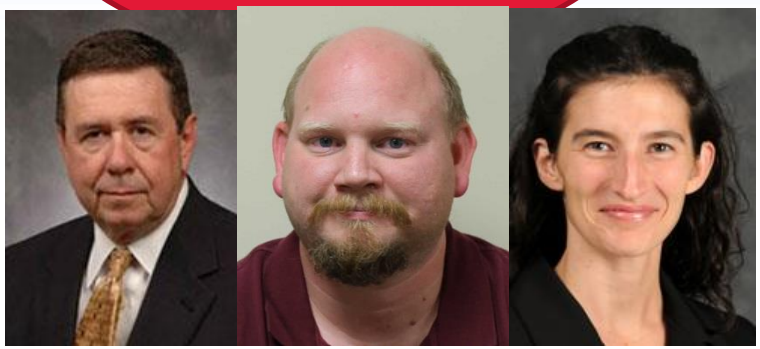
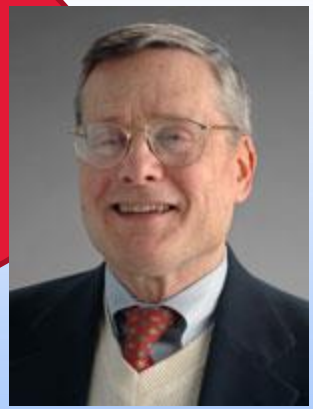
Our Team

University of Kansas School of Medicine-Wichita



Public Health Law Center

University of Kansas Medical Center- Kansas City



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Team

Our team has includes:

- A community-based participatory oriented faculty
- A lawyer at the Public Health Law Center
- An environmental health professional with more than 30 years of experience in city government
- a multi-disciplinary advisory group

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Methods

- The team is collecting state and national-level best practices regarding domestic water wells.

- This is occurring predominately through two mechanisms:

  1. **Surveying environmental professionals in Kansas** and across the country, and

  2. **Reviewing laws, regulations, and codes in Kansas** and across the country

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Survey Methods

Environmental health professionals were provided an opportunity to complete a survey of their policies and practices:

- in person at spring (April 2016) or fall (September 2016) conference

or

- via an online survey in (July 2016)

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Results from Environmental Professionals in Kansas

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Respondents

- Of the 61 potential respondents, 55 completed the survey, a 90% response rate.
  - 58% completed at the spring meeting
  - 9% completed at fall meeting
  - 33% completed online

- Respondents were most likely to report serving a county (42%), followed by a city (17%), state (13%), or multi-county jurisdiction (13%)

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How Frequently in Last Year Received Requests to Sample

Annual Number of Requests	Frequency	Percent
0	3	8%
1 - 24	14	39%
25 - 49	7	19%
50 - 99	5	14%
100 or more	7	19%

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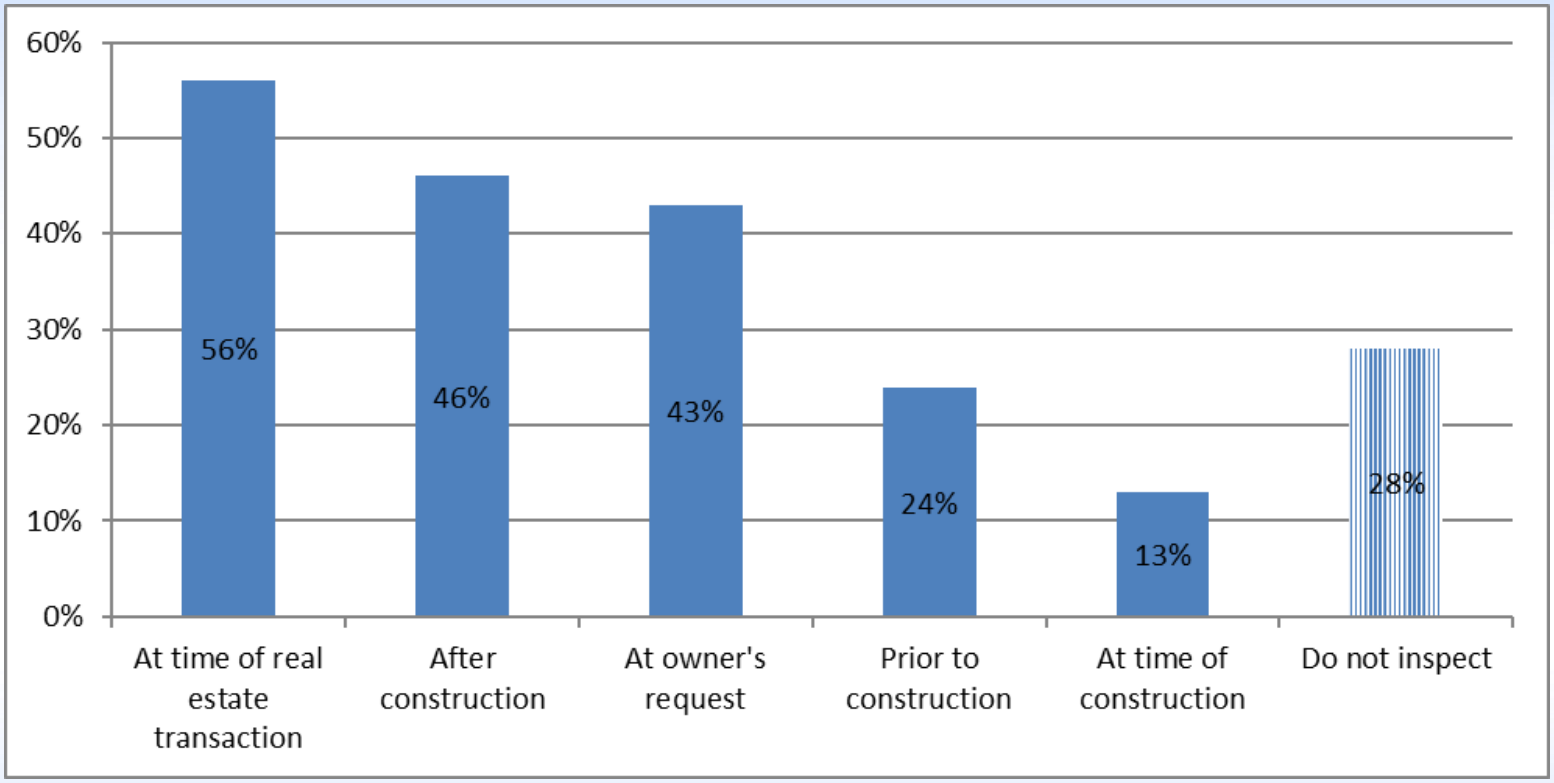
When Inspect Wells



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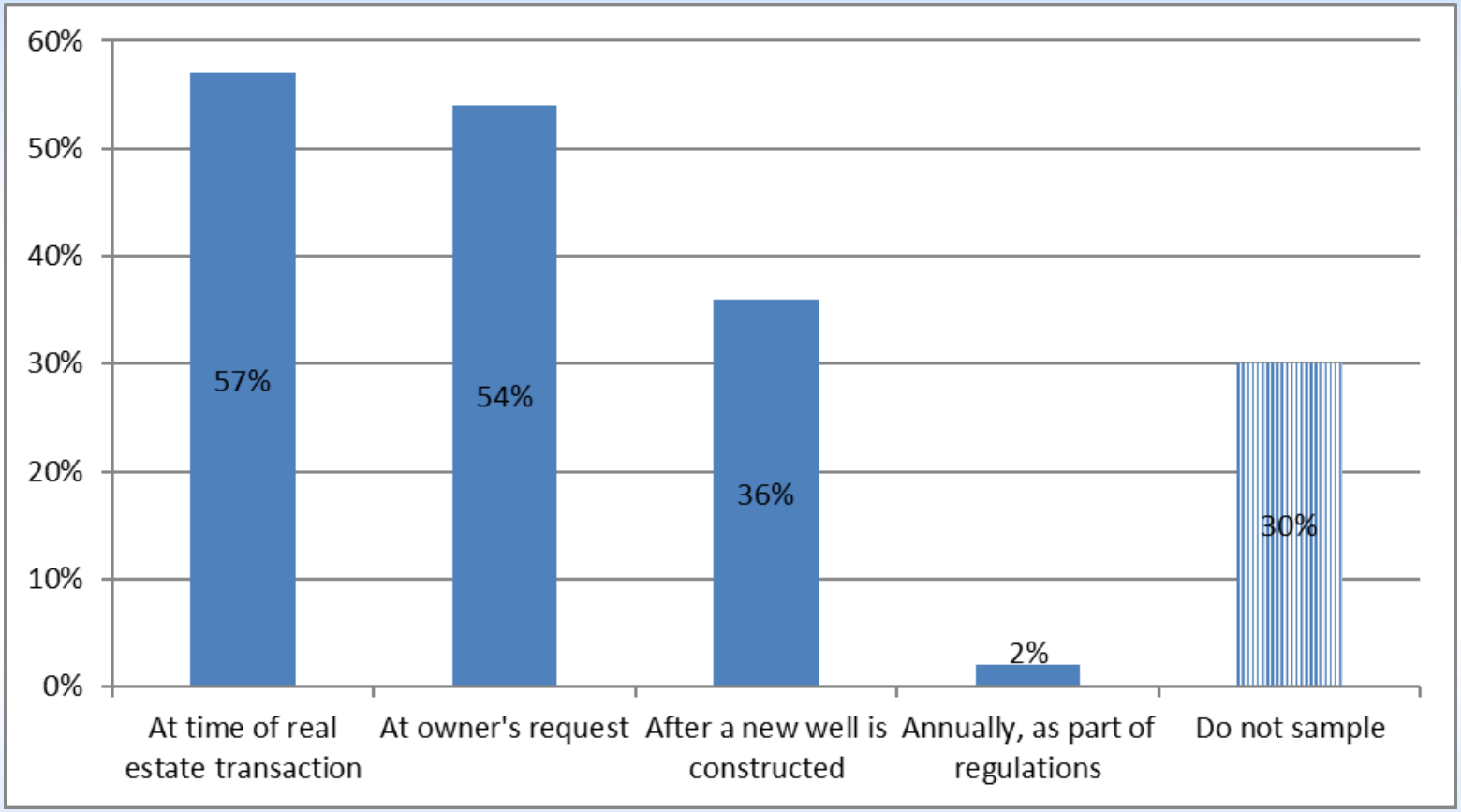
When Sample



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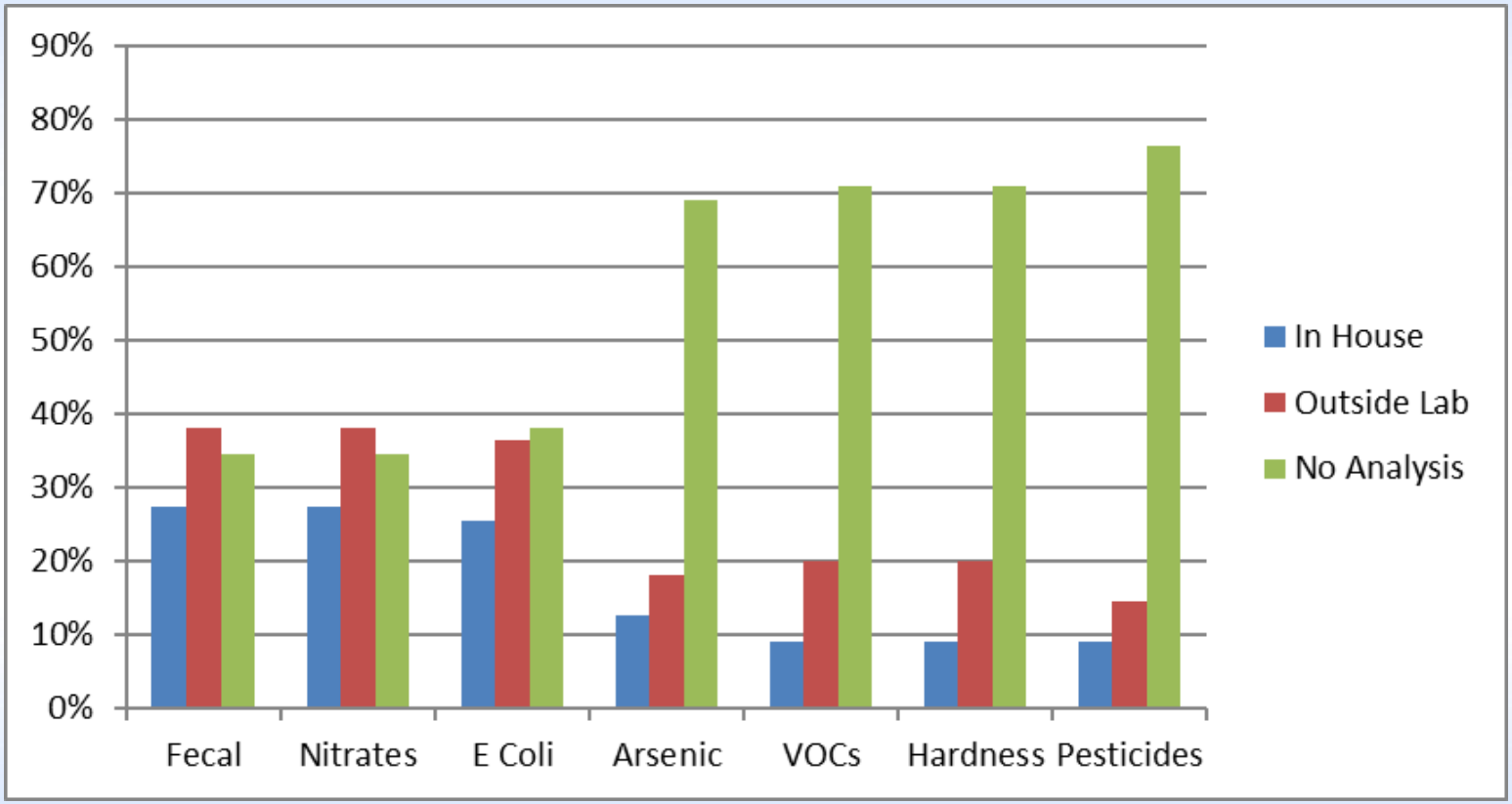
Analysis Capabilities



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Results from A Review of Laws, Regulations, and Codes in Kansas

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Regulation Methods

County codes, ordinances, and statutes were examined for common themes regarding private water well regulations:

- 103 county sanitation codes
- Municode – legal database of participating Kansas counties and municipalities, addressing 'water well'
  - Municipal or county statutes
  - Local ordinances

Themes

Themes from Kansas statutes, codes, and ordinances:

1. Regulations on location, construction of wells
2. What is inspected/sampled/analyzed
3. When do inspections/sampling/analyses occur
4. Logistics

Location & Construction of Wells

- Construction requirements for water wells such as minimum set-backs, minimum distance from septic systems, distance from a public water supply, building code for structures

- Licensing and permitting for well construction – responsibility of well-owners or contractors

What is Inspected, Sampled, Analyzed

- Great variation in contaminants that are required
- Bacteria and nitrates generally serve as the minimum
- Codes seem to lack consideration of local hazards and vulnerabilities

When Inspected, Sampled, Analyzed

- The frequency with which inspection, sampling, and analysis occurs varies
- Real-estate transactions and the re-financing of property are the most common triggers for any type of inspection, sampling, and analysis

Logistics

- Definitions of non-public water supplies (semi-public, private, non-public)
- Abandoned wells
- Enforcement, violations
- Is technical assistance available; if so, who?
- Reporting requirements to the well-owner and public

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Discussion

Discussion

- The survey of environmental health professionals and the policy scan of Kansas county sanitation codes has revealed a predominant focus on **well construction** (e.g., how far wells can be from other structures)

- This focus on the well construction and their physical attributes leads to a lack of focus on water quality

Discussion

- The lack of comprehensive and standardized sampling procedures and policies in Kansas is consistent with other states.[9]
- Nitrates and bacteria are common threats, but threats to groundwater supplies include multiple other sources that may not be detected when testing for nitrates or bacteria
- Infrequent sampling for VOCs, pesticides, arsenic, and hardness.

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Next Steps

- Interview key informants across Kansas
- Survey stakeholders across Kansas –feasibility of various policies
- Share results
- Develop policy resource guide

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Questions?

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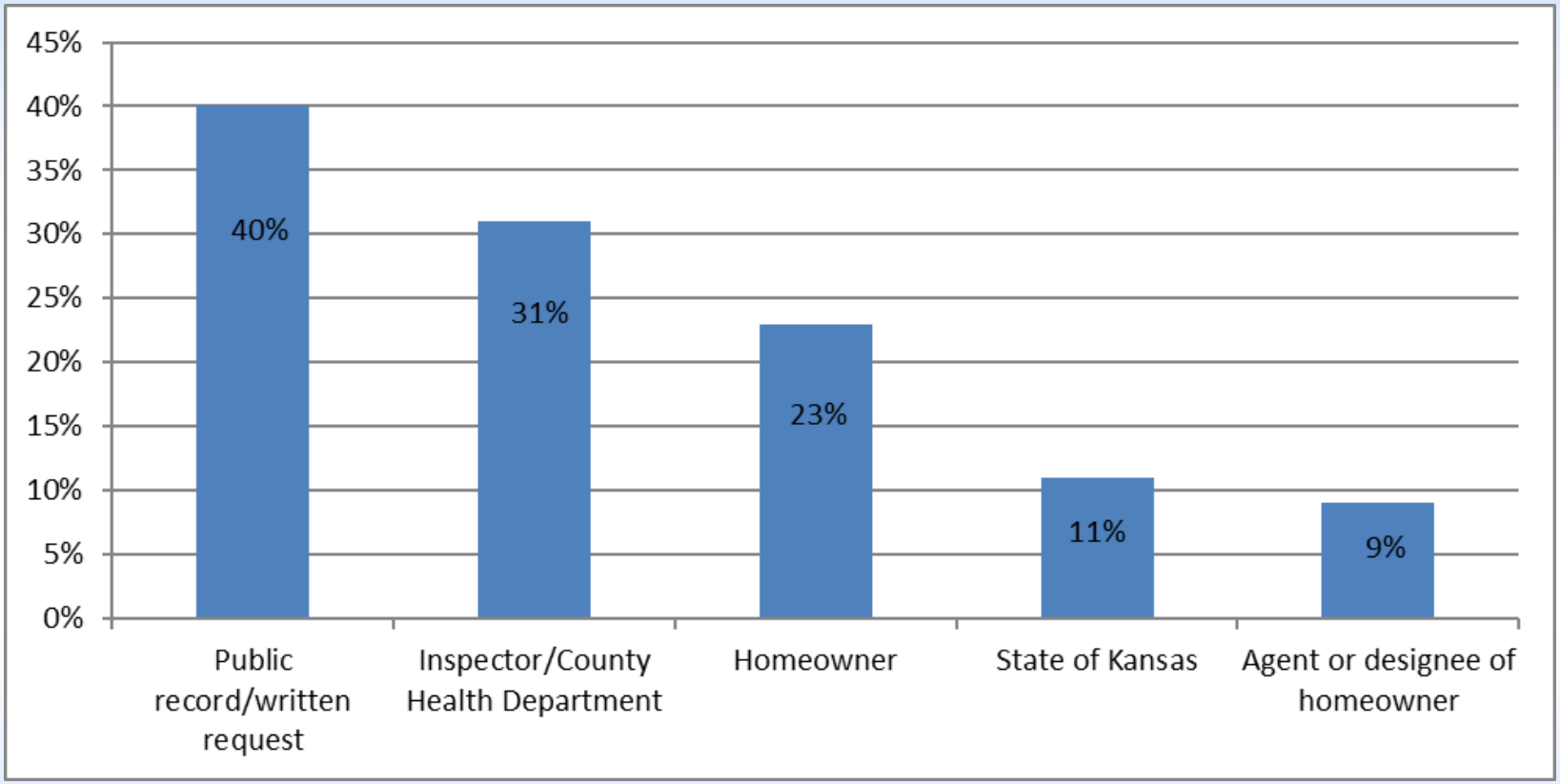
Who Can Access Data



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Issues We Need to Consider if Analysis Results Available to Public

- Awareness of how to interpret results
- Property values
- Privacy concerns
- Cost of sampling
- Finger pointing amongst neighbors
- Health
- Concern of government knowing what is in their water

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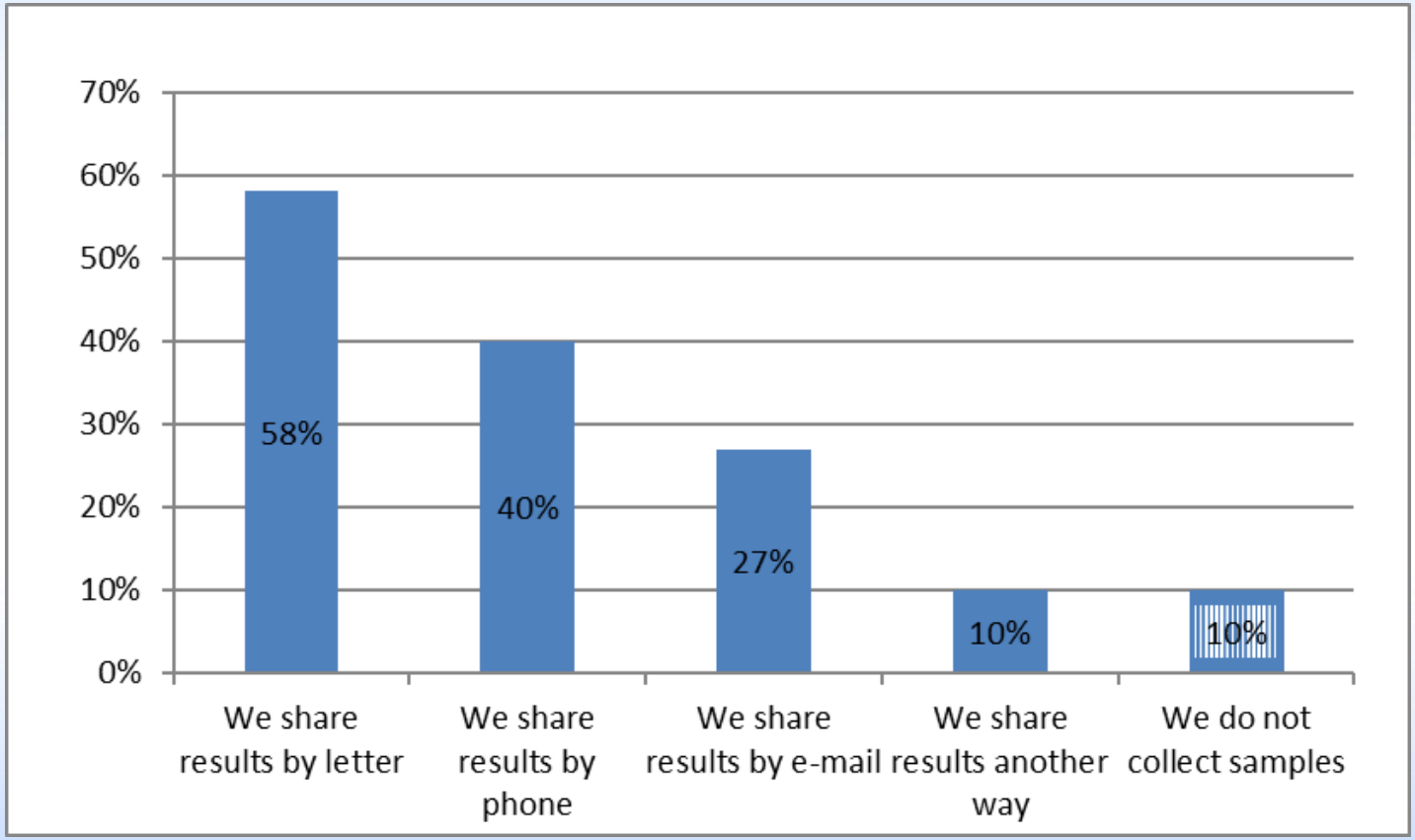
How Results Are Shared with Well Owner



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