

Implementing a Preliminary Risk Communication Strategy for Community Appropriate Messages

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Background

- **What is risk communication?**

- Dynamic two-way exchange of information and opinions among individuals, groups or institutions

- **Why is it important to Environmental Public Health Tracking?**

- “Accountable” to the public
- Data dissemination at ALL levels

Background

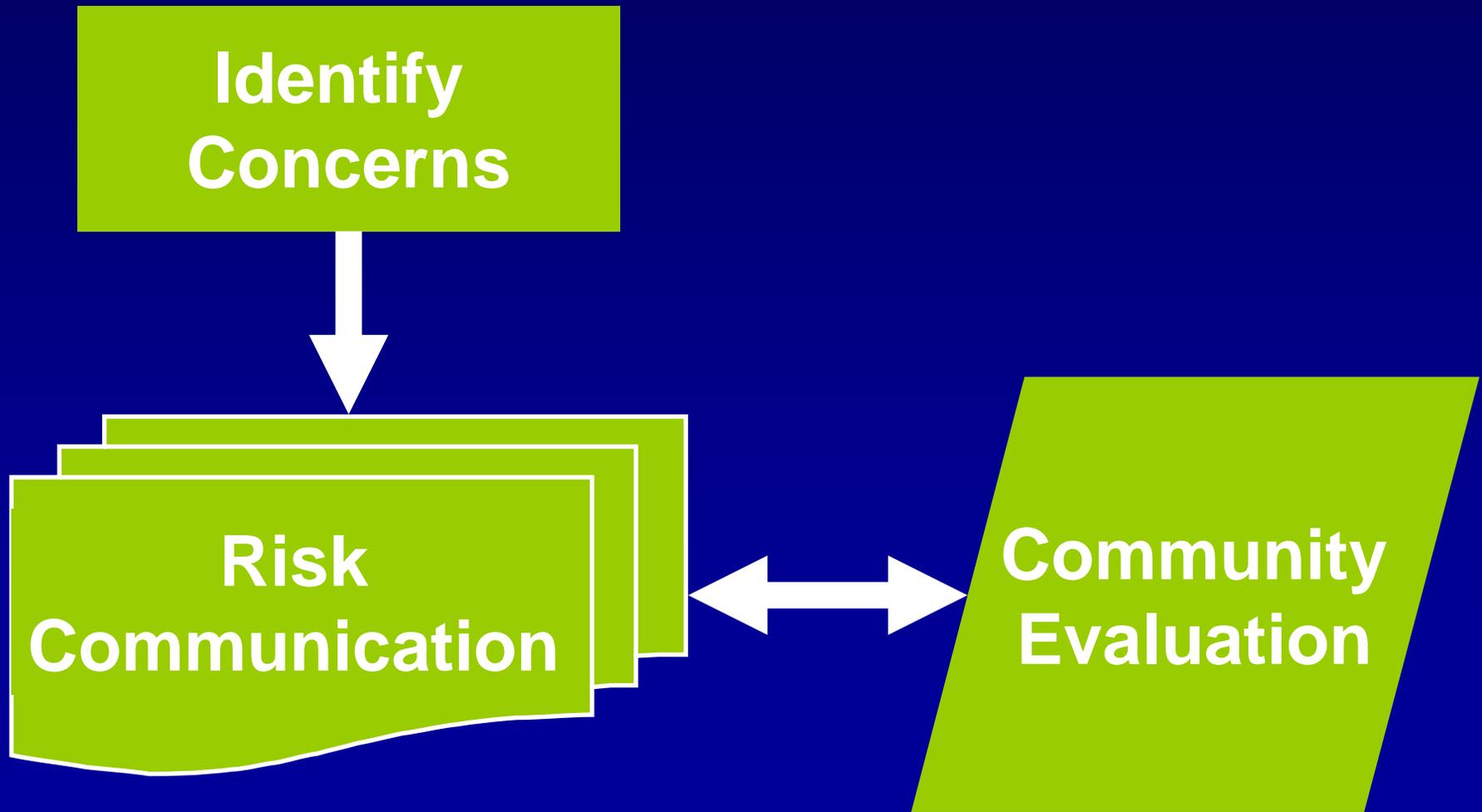


- **Norco, Louisiana**
 - Location
 - Industry
 - Community concern
- **Pilot Study**
 - Air Monitoring Norco
 - Interagency partnership
 - 2 years of air sampling
 - Tulane
 - Communication

Objective

Identify health and environmental concerns among residents of Norco as a means for implementing a multistage risk communication strategy

Methods: Multistage Strategy



Methods: Survey Design

- **Health and Environment Perception Survey**
 - Modified a preexisting phone survey
 - Dillman tailored design method for mail surveys
 - 1200 valid addresses
 - 9 questions
 - Health, environment and demographic characteristics
- **Questions two and five identified concerns**
 - 15 different health issues
 - 18 different environmental factors

Methods: Survey Design

■ Rating Scale:

Indicate how concerned you are about each issue/factor for yourself, those who live with you, or others in your community.

■ No concern at all

■ Not much of a concern

■ Somewhat of a concern

■ A major concern

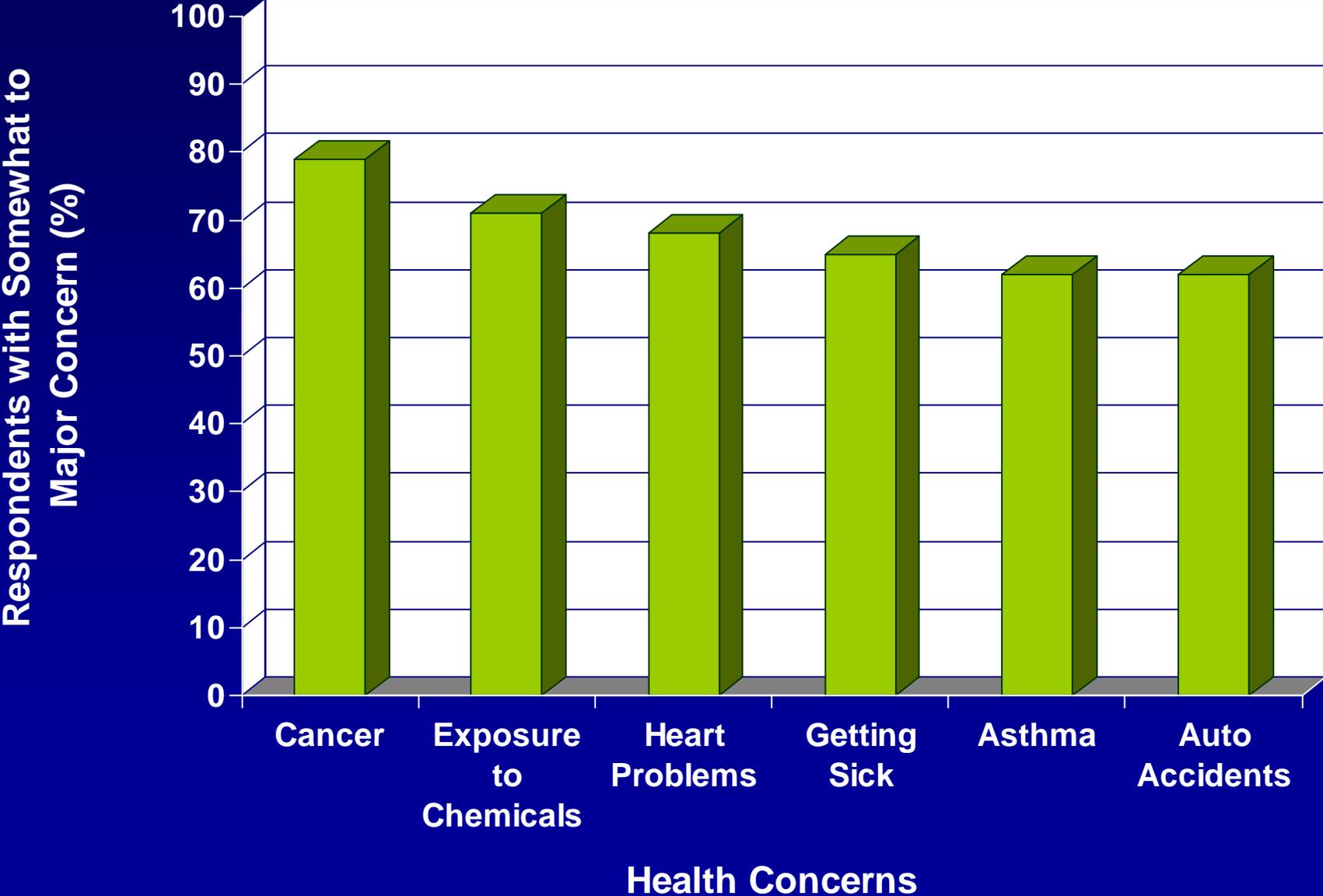
Category 1

Category 2

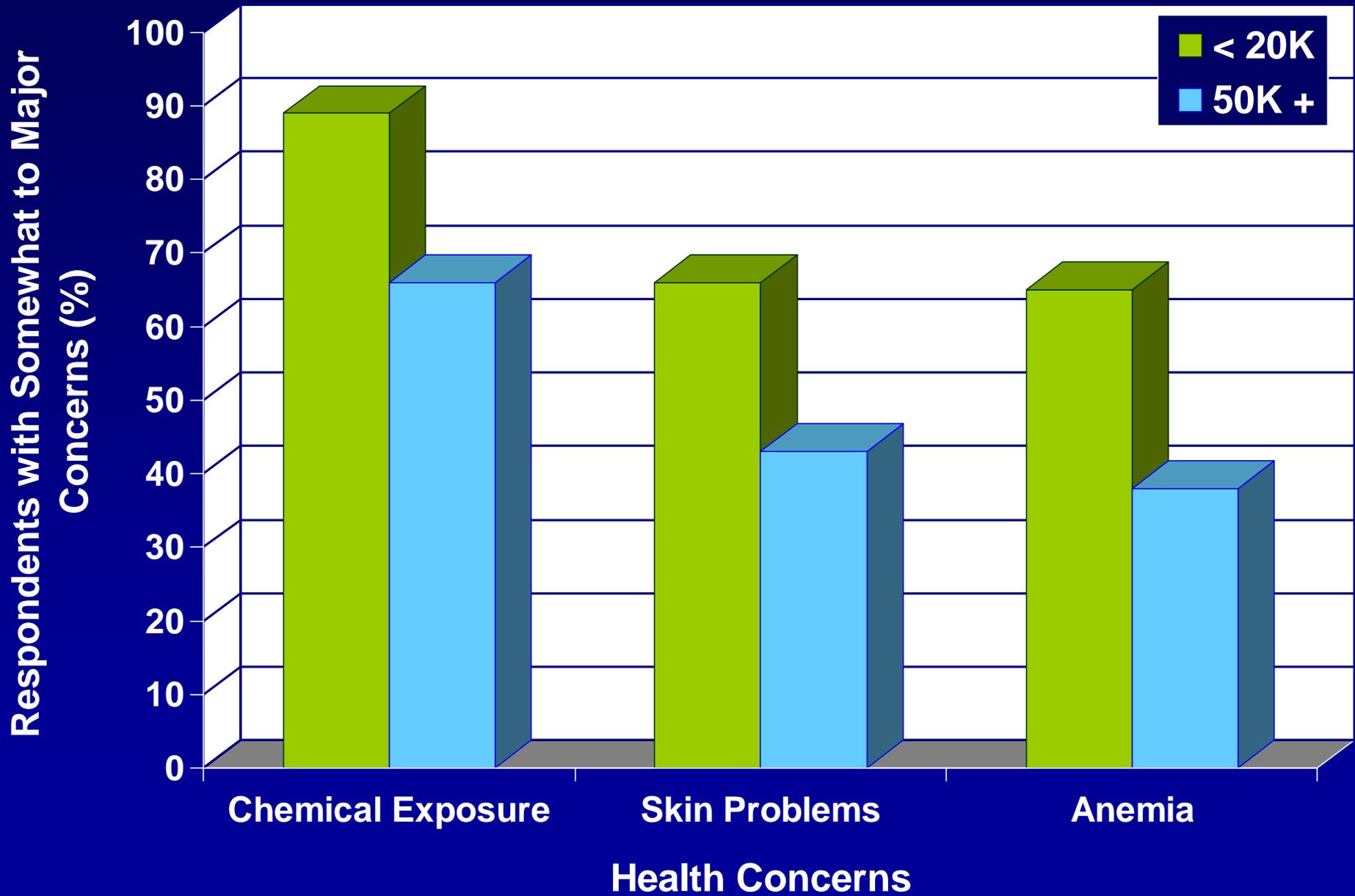
Results: Population Characteristics

- 334 Adult Norco residents completed and returned the survey
 - 64% Female
 - 72% \leq 40 Years
 - 79% \leq \$20,000 Household income
 - 50% Some college
 - 92% White
 - 86% Insured
 - 45% were employed by Shell or Motiva

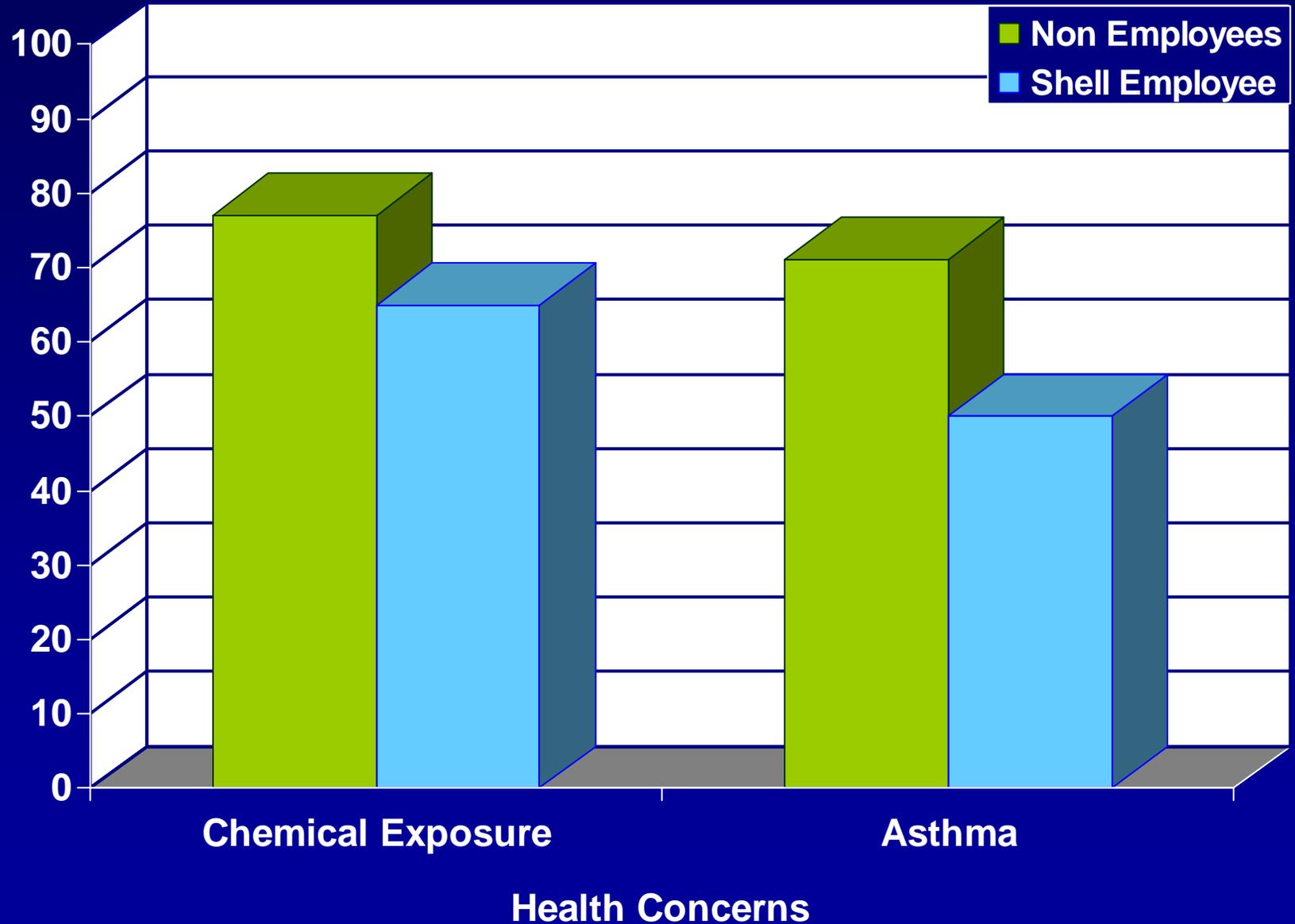
Top Six Health Concerns Among Residents of Norco



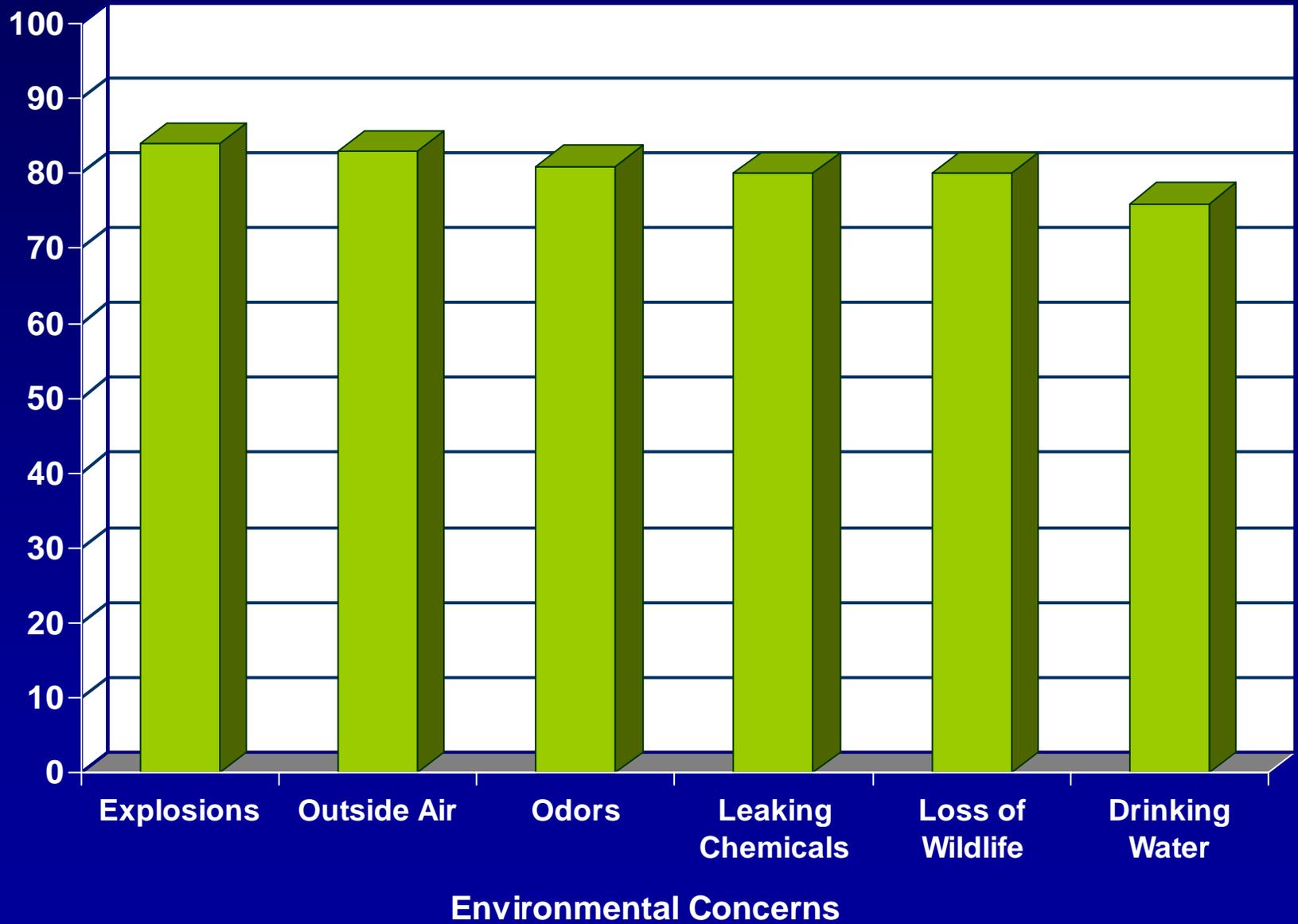
Health Concerns Among Residents of Norco



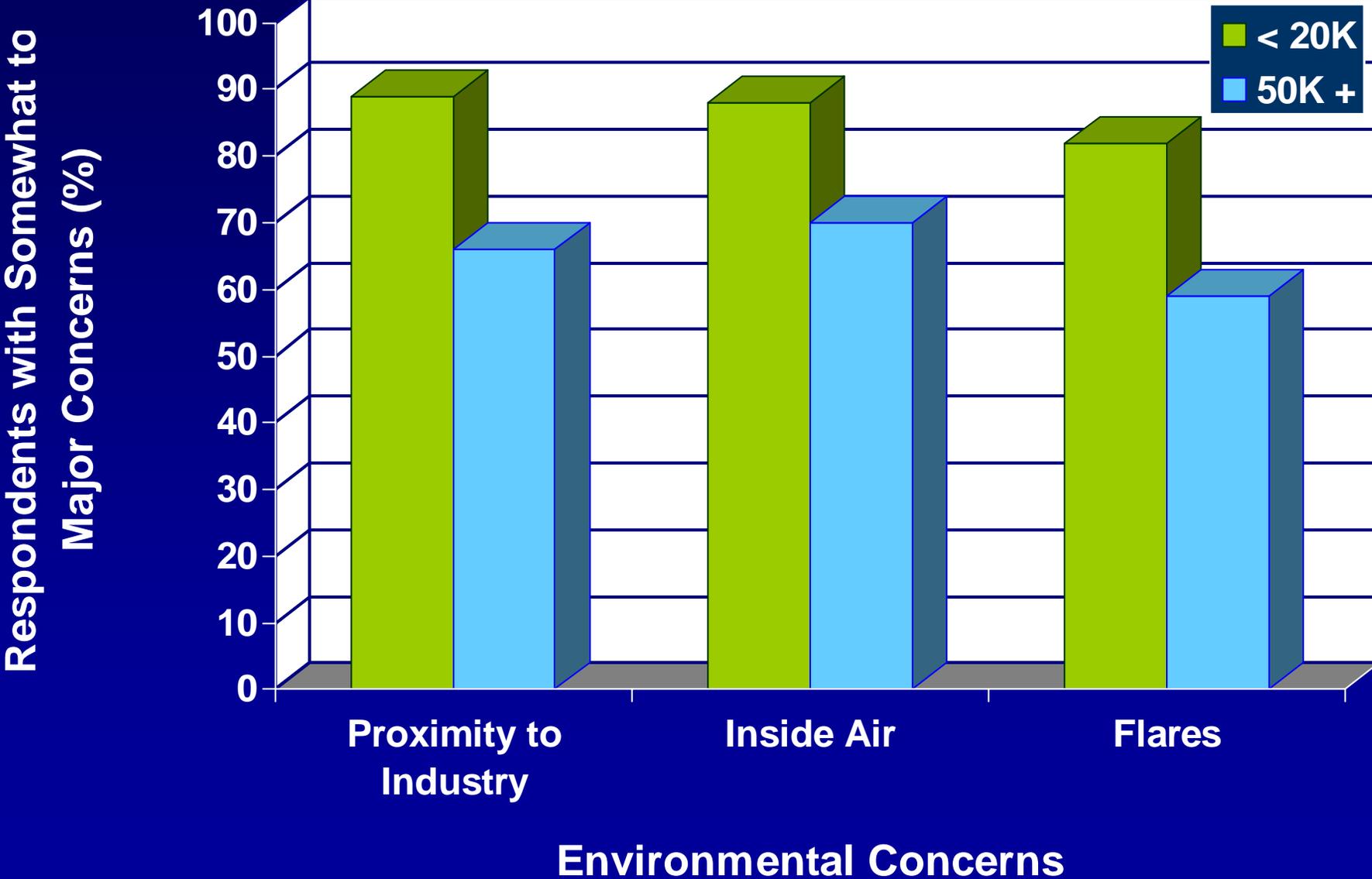
Health Concerns Among Residents of Norco



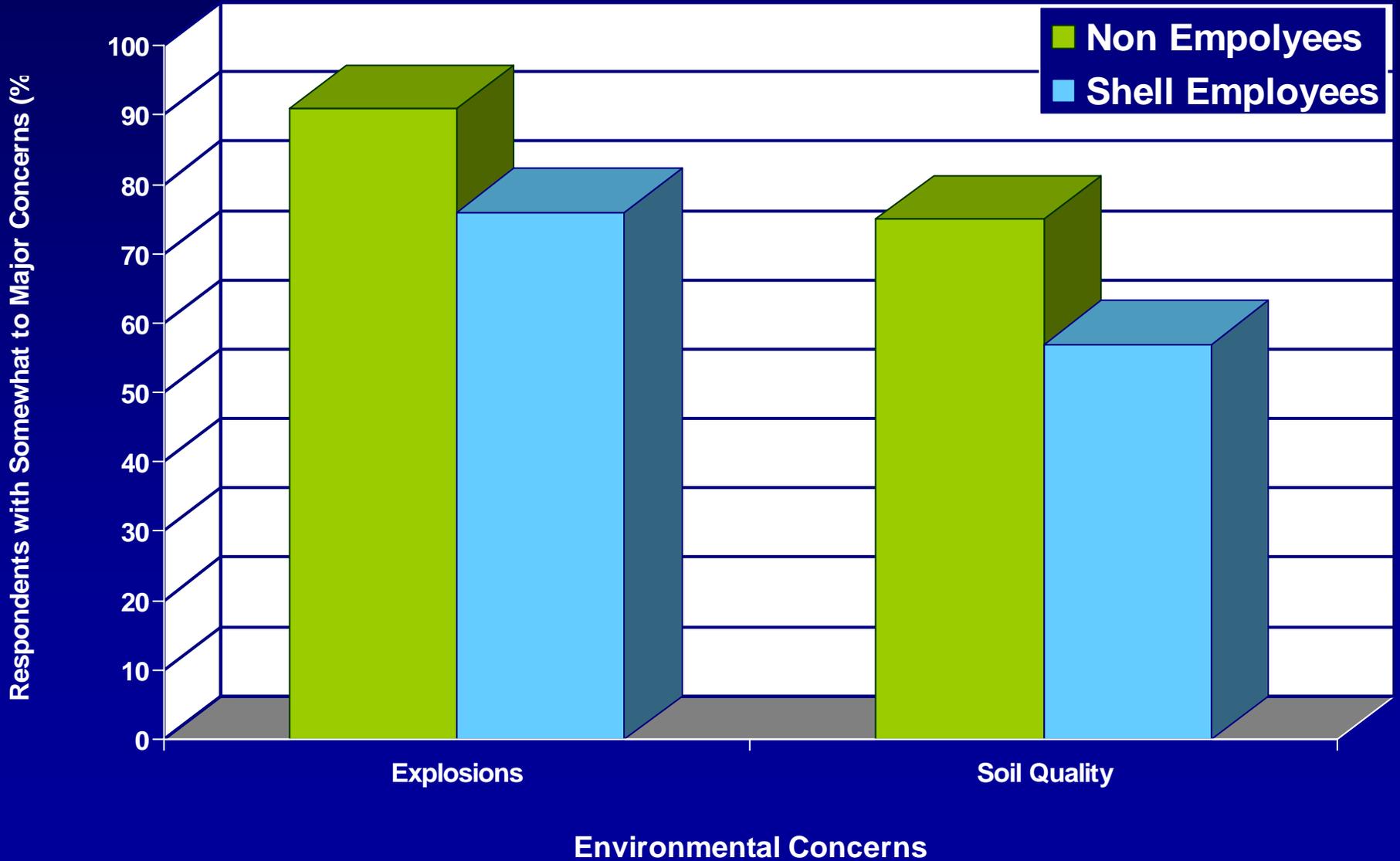
Top Six Environmental Concerns Among Residents of Norco



Environmental Concerns Among Residents of Norco



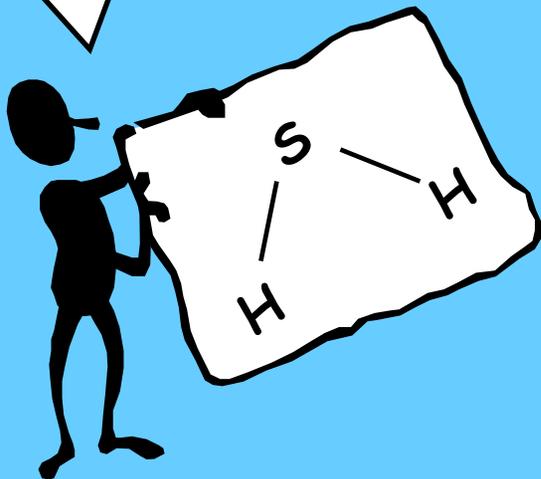
Environmental Concerns Among Residents of Norco



Risk Communication

Unpleasant Odors

Did you know
this compound is
found in crude
oil, swamp gas
and your
intestines?



- **Trusted information**
 - 52% identified brochures
- **Risk communication**
 - One year of monthly flyers
 - Top six category 2 concerns
 - Health
 - Environment
 - Community Leaders
 - “Sweet and Simple”
- **Flyer Evaluation**

Community Evaluation

75% (N=145) Read Flyers

92% Answered Health Questions

90% Answered Environmental Questions

94% Would like to receive more flyers

Summary

- **Multistage strategy**
 - Identify concerns
 - Risk Communication
 - Community Evaluation

- **Community appropriate messages**
 - Understand community concern
 - Message receipt
 - Foundation for future communication

Future Study

- **Focus Groups**

- Selection criteria

- Income

- Flyer Evaluation

- **Communicating air sampling results**

Results: Population Characteristics

Demographics	N (%)
Gender*	
Male	119 (35.6%)
Female	214 (64.1%)
Age*	
< 40	70 (20.1%)
40 – 64	134 (40.1%)
≥ 65	106 (31.7%)
Income*	
< \$20,000	67 (20.0%)
\$20,000 - \$50,000	131 (39.2%)
≥ \$50,000	117 (35.0%)
Education*	
≤ High School	155 (46.4%)
Some College	84 (25.1%)
College +	71 (21.2%)
Race*	
White	307 (91.9%)
Non White	26 (07.8%)
Health Insurance*	
Insured	288 (86.2%)
Uninsured	43 (12.9%)
Shell/ Motiva Employee*	
Employee	151 (45.2%)
Never employed	181 (54.1%)

Health Concern Odds Ratios

Table 2-1. Health Concern Odds Ratios

Area of Concern	Odds ratio in favor of having at least some concern for 50k+ relative to < 20k	Odds ratio in favor of having at least some concern for Shell employee relative to never Shell employee
	Estimate (95% C.I.) ¹	Estimate (95% C.I.) ²
Overall Health	3.35 (1.39, 8.11)	1.17 (0.63, 2.16)
Getting sick	3.19 (1.31, 7.76)	1.36 (0.75, 2.45)
Asthma / diseases in children	4.65 (1.87, 11.61)	2.29 (1.27, 4.13)
Obesity / poor diet	2.11 (0.92, 4.85)	1.20 (0.68, 2.11)
Infectious Disease	2.61 (1.11, 6.14)	1.29 (0.72, 2.31)
Cancer	2.19 (0.76, 6.33)	1.38 (0.70, 2.72)
Exposure to chemicals	5.38 (1.87, 15.46)	2.17 (1.16, 4.05)
Firearm injuries	2.05 (0.88, 4.79)	0.90 (0.49, 1.58)
Automobile accidents	1.02 (0.43, 2.42)	0.88 (0.49, 1.58)
Sexually transmitted diseases	1.17 (0.43, 3.20)	0.61 (0.29, 1.27)
Alcohol / drug illnesses	1.12 (0.45, 2.80)	0.88 (0.46, 1.69)
Pregnancy Complications	2.69 (1.11, 6.48)	0.59 (0.32, 1.08)
Skin problems	3.44 (1.49, 7.93)	1.33 (0.76, 2.32)
Anemia / low RBC count	2.99 (1.29, 6.96)	0.64 (0.36, 1.14)
Heart Problems	3.80 (1.49, 9.66)	1.07 (0.58, 1.98)
Diabetes	2.16 (0.95, 4.93)	0.93 (0.52, 1.64)

¹ Adjusted for gender, age, education level, health insurance status, and having ever worked for Shell, inc.

² Adjusted for gender, age, education level, health insurance status, and income.

Environmental Concern Odds Ratios

Table 2-2. Environmental Concern Odds Ratios

Area of Concern	OR in favor of having at least some concern for 50k+ relative to < 20k	OR in favor of having at least some concern for Shell employee relative to never Shell employee
	Estimate (95% C.I.) ¹	Estimate (95% C.I.) ²
Overall Environment	9.95 (2.52, 39.35)	2.73 (1.22, 6.08)
Outside air	5.26 (1.44, 19.19)	2.31 (1.04, 5.10)
Inside air	6.31 (2.00, 19.87)	2.10 (1.08, 4.09)
Drinking water	3.60 (1.18, 10.98)	1.68 (0.85, 3.33)
Recreational water	5.17 (1.85, 14.46)	1.67 (0.88, 3.14)
Soil	3.28 (1.31, 8.24)	2.28 (1.26, 4.13)
Noise	4.64 (1.71, 12.64)	1.10 (0.59, 2.06)
Litter / waste	3.81 (1.40, 10.35)	1.83 (0.95, 3.55)
Leaking chemicals	3.06 (0.99, 9.45)	1.89 (0.91, 3.94)
Hazardous waste	4.07 (1.49, 11.13)	1.62 (0.86, 3.05)
Particles in the air	2.76 (1.02, 7.48)	1.88 (0.97, 3.64)
Loss of natural areas	2.17 (0.84, 5.60)	1.29 (0.68, 2.46)
Loss of wildlife	2.80 (0.98, 7.98)	0.97 (0.48, 1.96)
Plumes of smoke	3.90 (1.30, 11.71)	1.64 (0.85, 3.17)
Proximity of industry	6.30 (2.02, 19.65)	1.44 (0.75, 2.74)
Unpleasant odors	3.10 (1.00, 9.60)	1.78 (0.86, 3.70)
Fire flaring	3.92 (1.47, 10.40)	1.93 (1.05, 3.55)
Explosions	6.38 (1.47, 27.78)	2.76 (1.25, 6.13)
Establishment of industry	4.11 (1.50, 11.26)	0.78 (0.40, 1.52)

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