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# Cell Phone Mostly or Cell Phone Mainly: A Comparison of Two Approaches to Dual Frame Cell Phone and Landline Samples

Preliminary results from the 2008-2009 New Jersey Health Care Opinion Poll

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Presented at the 64<sup>th</sup> Annual Conference  
American Association of Public Opinion Research  
Hollywood, Florida  
May 17, 2009

# Project Team

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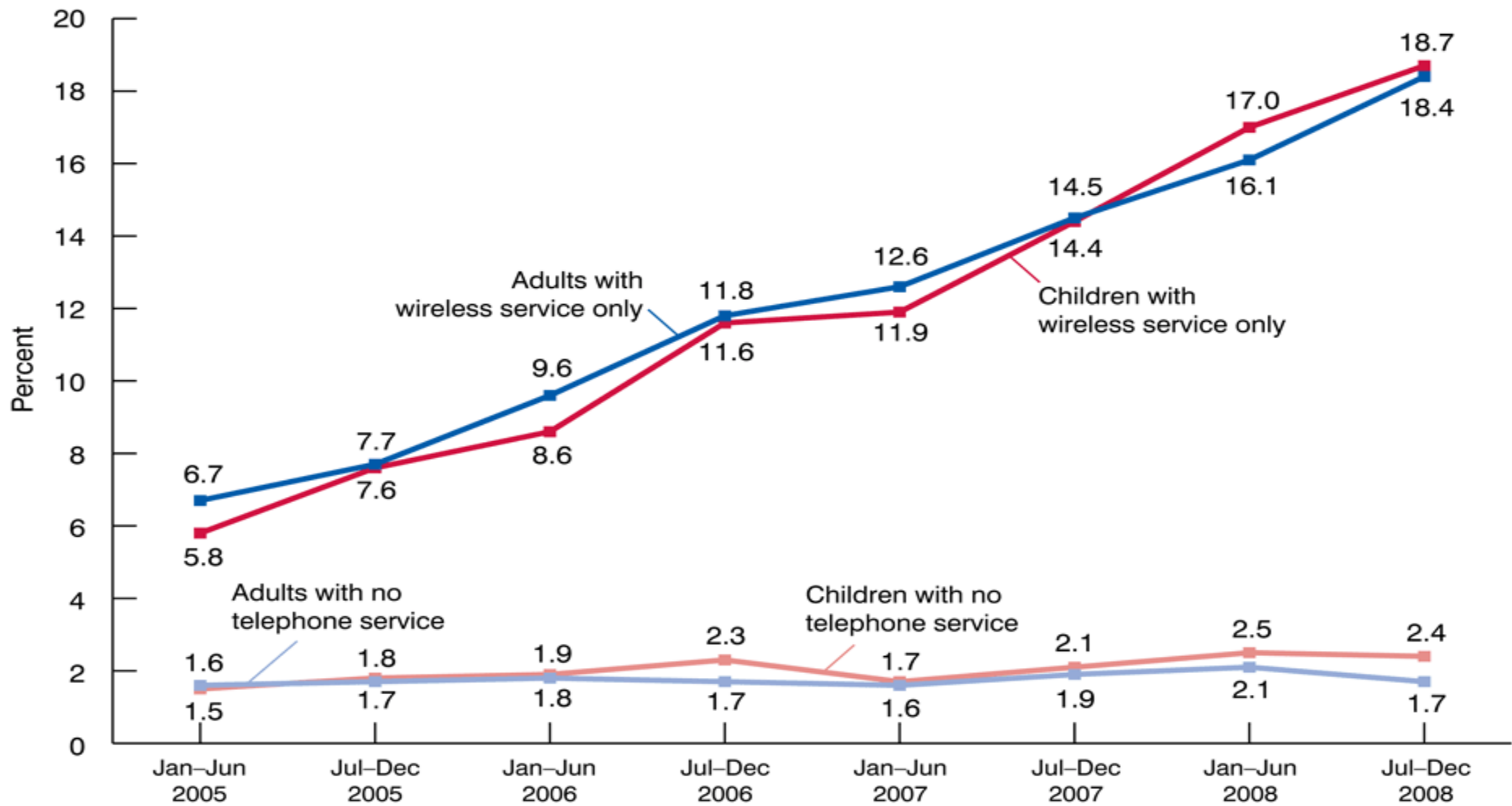
**Financial support from  
the Robert Wood Johnson Foundation**

# Potential for Sample Frame Coverage Bias in Health Surveys by Telephone

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- Telephone surveys have traditionally been based on Random Digit Dial (RDD) samples using landlines
- A growing number of households rely on wireless phones and do not have landlines (or don't use them much)
- Potential for sample frame coverage bias varies by:
  - Prevalence of wireless substitution (coverage)
  - Magnitude of wireless - landline differences (bias)

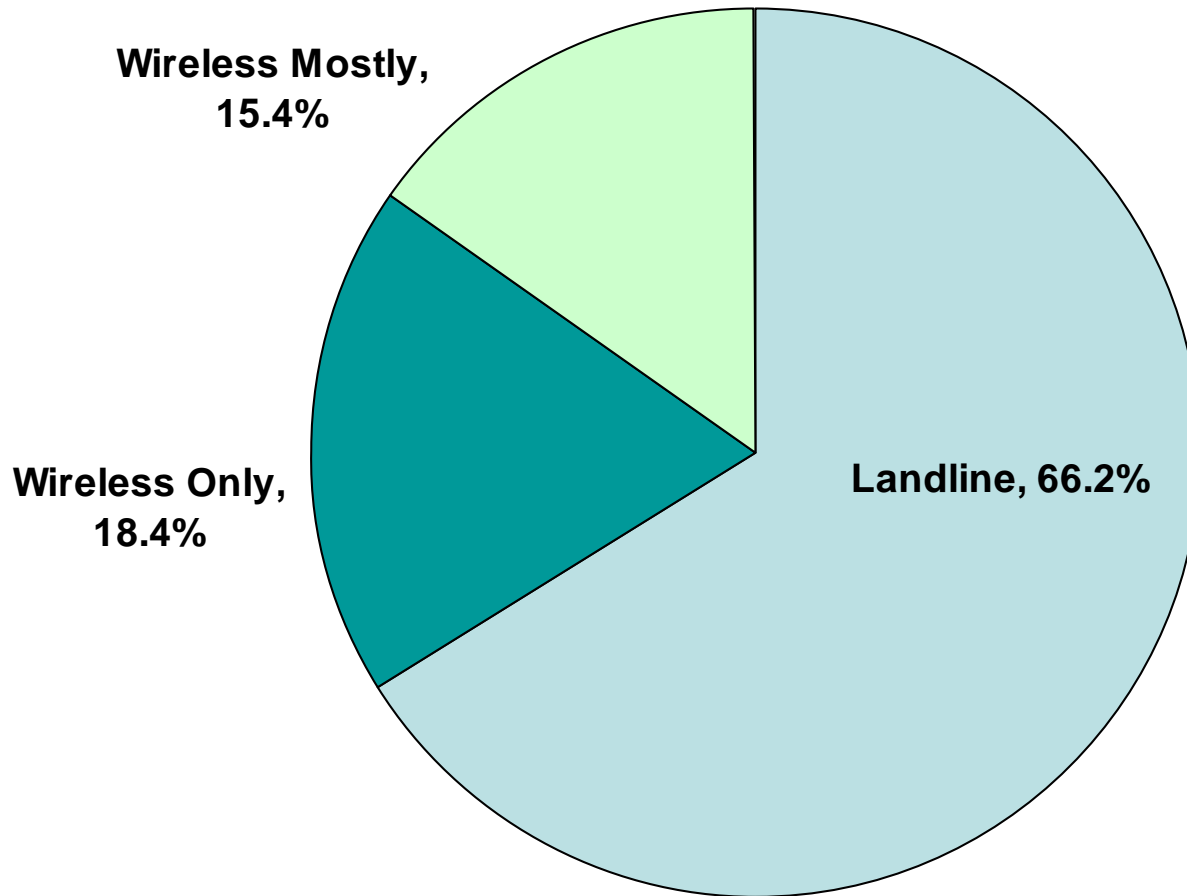
# Percentages of adults and children living in households with only wireless telephone service or no telephone service: United States, 2005–2008



Source: Blumberg and Luke, Wireless Substitution: Early Release of Estimates from the National Health Interview Survey : July-December 2008. National Center for Health Statistics, May 6, 2009.

# Estimated Population Distribution: 2008

## Wireless Only, Wireless Mostly, and Landline



Source: Blumberg and Luke, Wireless Substitution: Early Release of Estimates from the National Health Interview Survey : July-December 2008. National Center for Health Statistics, May 15, 2009.

# Why Are Wireless Mostly Important?

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- They are represented in the landline sampling frame
- Concern: They are covered by the frame but are they reached in the frame?
- Opportunity: If they are reached in the frame, are they similar enough to the cell phone only to be a surrogate for that population?

# Alternative Operational Definitions of Dual Users (Landline and Cell phones) Unrepresented or Underrepresented in Landline Samples

- The proportion of calls received by dual users by frame (cell phone mostly)
- The willingness or propensity of dual users to respond by frame (cell phone mainly)

# Measuring Wireless Mostly in Dual Users

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(IF BOTH CELL AND LANDLINE)

Of all the telephone calls that you (and other adults in your household) receive, are:

All or almost all calls received on cell phone **Wireless Mostly Sample**

Some received on cell phones

and some on landline phones, or

Very few or none on cell phone



# Measuring Wireless Mainly in Dual Users

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(IF BOTH CELL PHONE AND LANDLINE PHONES IN HOUSEHOLD) Thinking just about the land line home phone, NOT your cell phone, if that telephone rang, and someone was home, under normal circumstances how likely would it be answered.

Would you say:

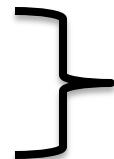
Extremely likely

Very likely

Somewhat likely

Somewhat unlikely

Not at all likely



**Wireless Mainly Sample**

# NJ Health Care Opinion Poll Design

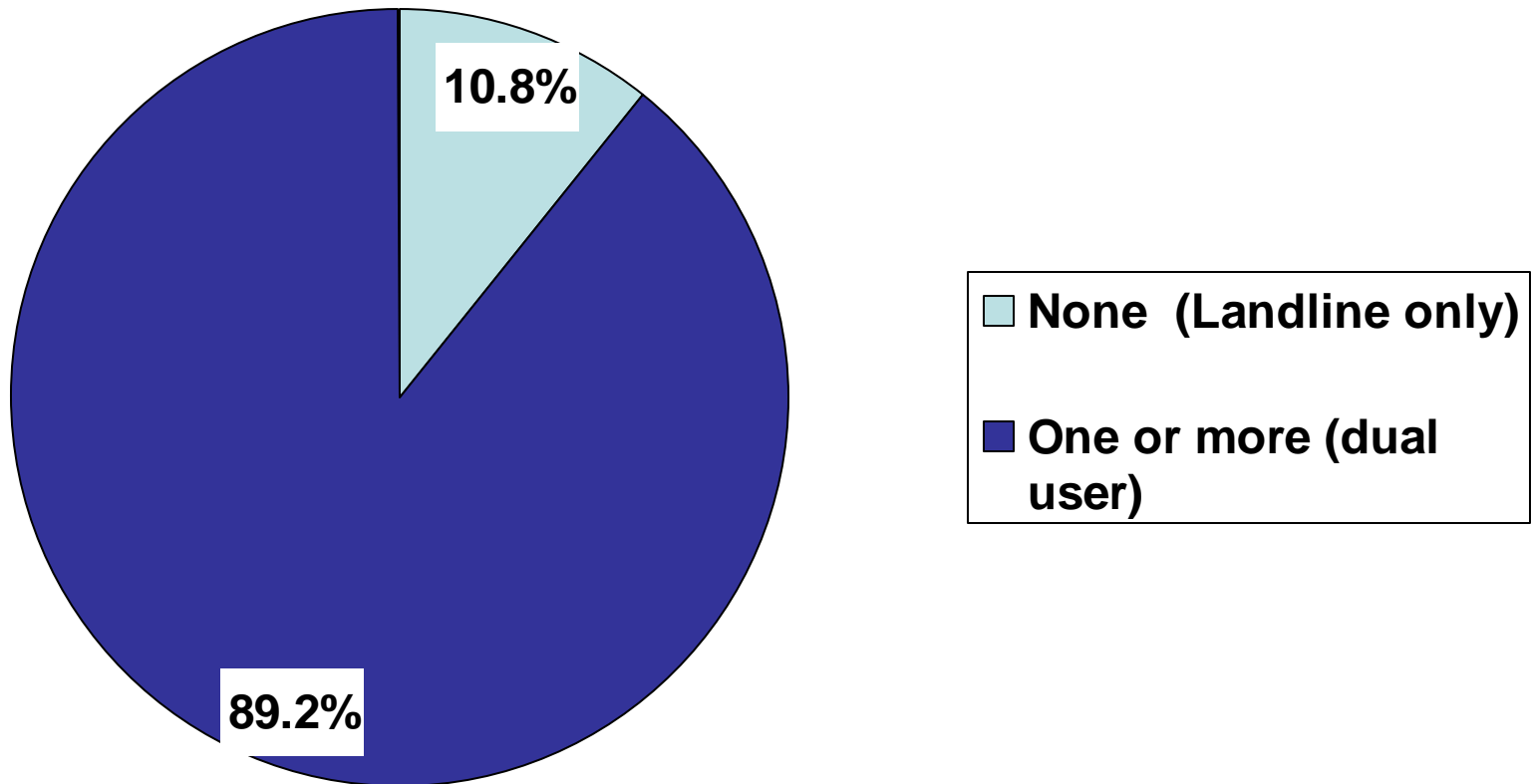
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- Purpose: gauge concerns about health care issues and support for reform in NJ
- Statewide RDD survey of adults aged 18+
- Dual frame: Landline and cell phone
- Field period: October 2008 to May 2009
- Interviews: English and Spanish
- Calling design: up to 18 contact attempts
- Incentives: \$10 for wireless respondents
- Length: 20.2 min (landline) & 22.8 min (wireless)

# Coverage and Reach in Landline and Cell Frames: Cell Mostly and Cell Mainly

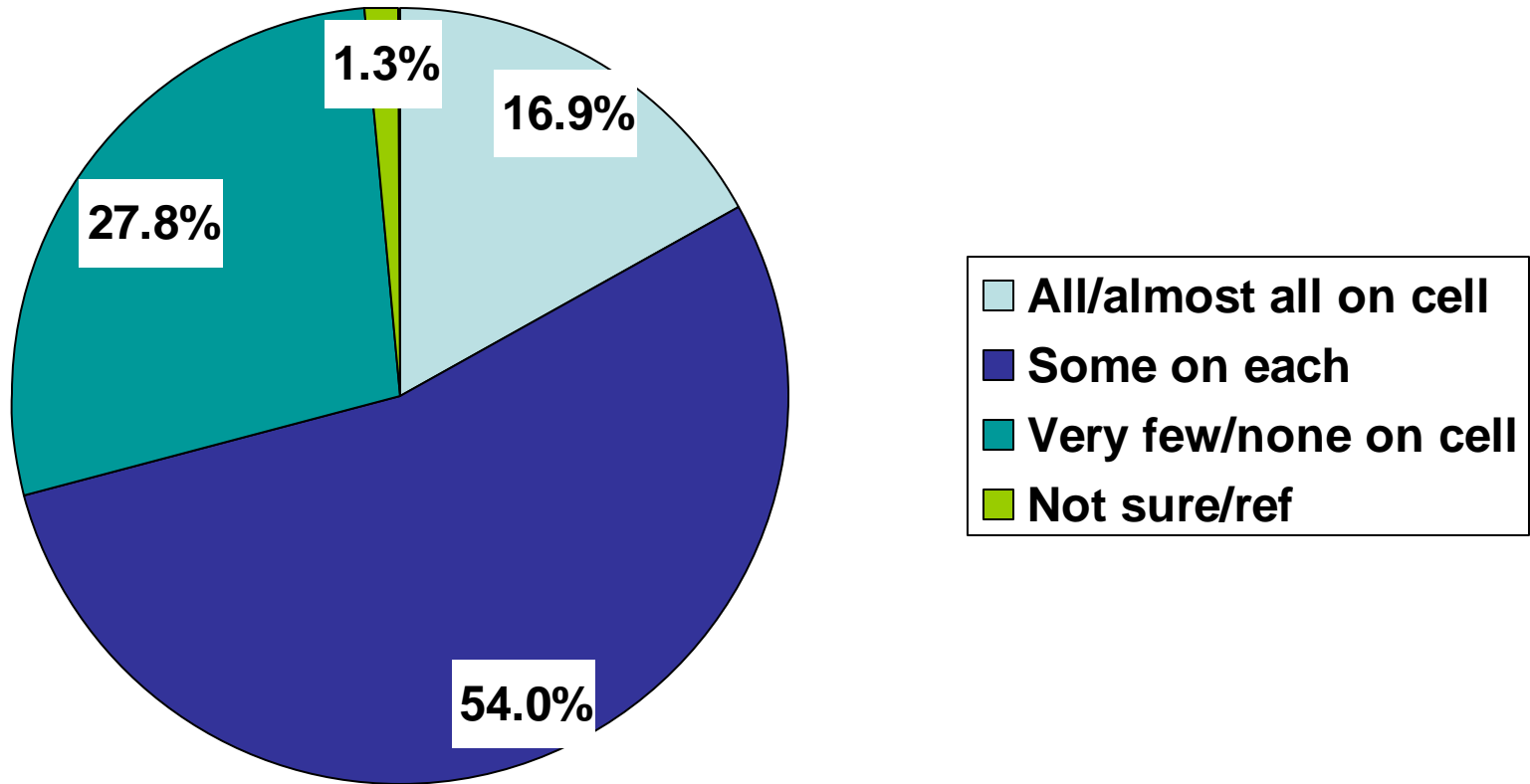
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# Landline Only and Dual Users: New Jersey Landline Sample



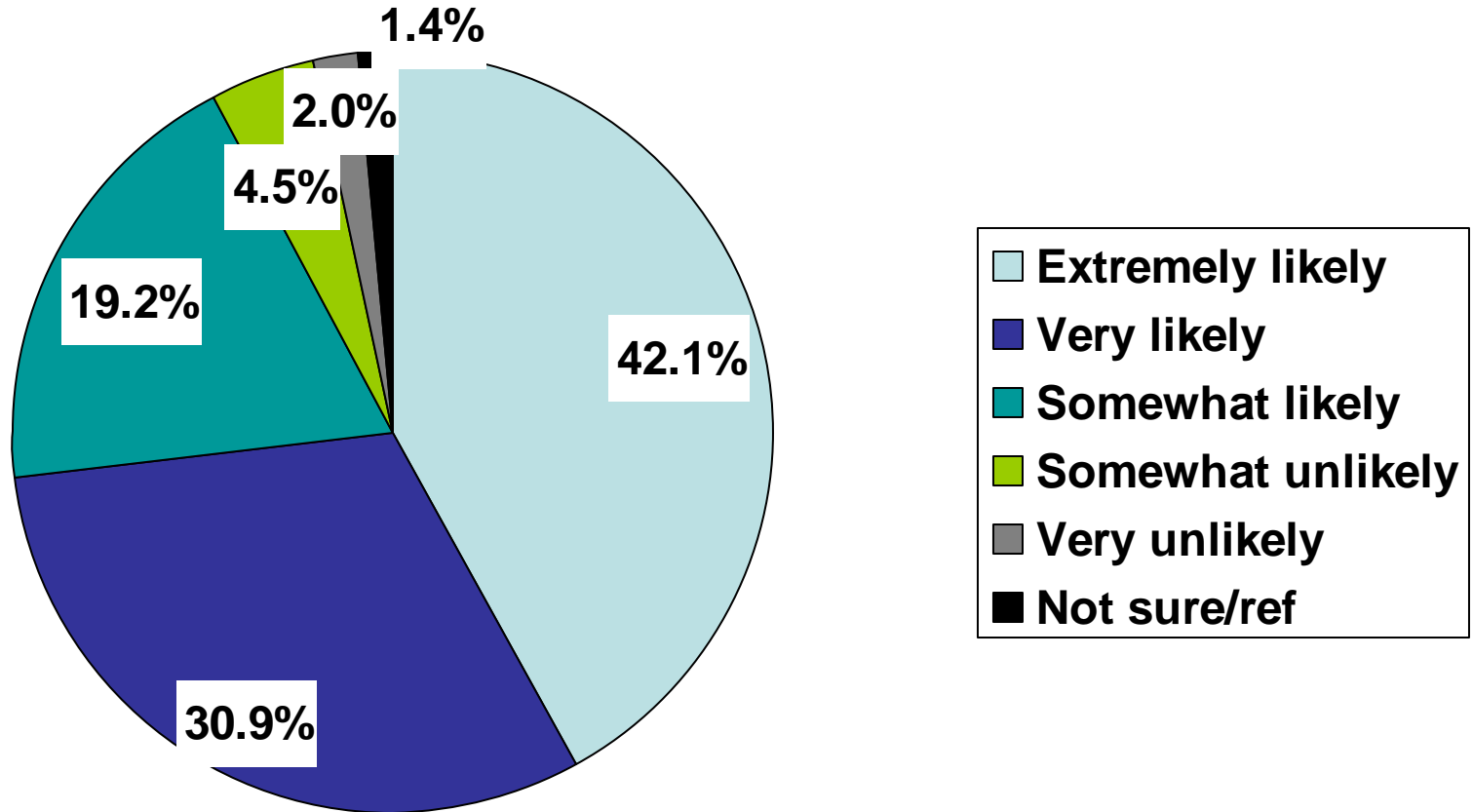
SC8c. How many working cell phone numbers do you (and other adults in the household) have? Landline sample N=1241

# Cell Phone Mostly in Dual Users: New Jersey Landline Sample



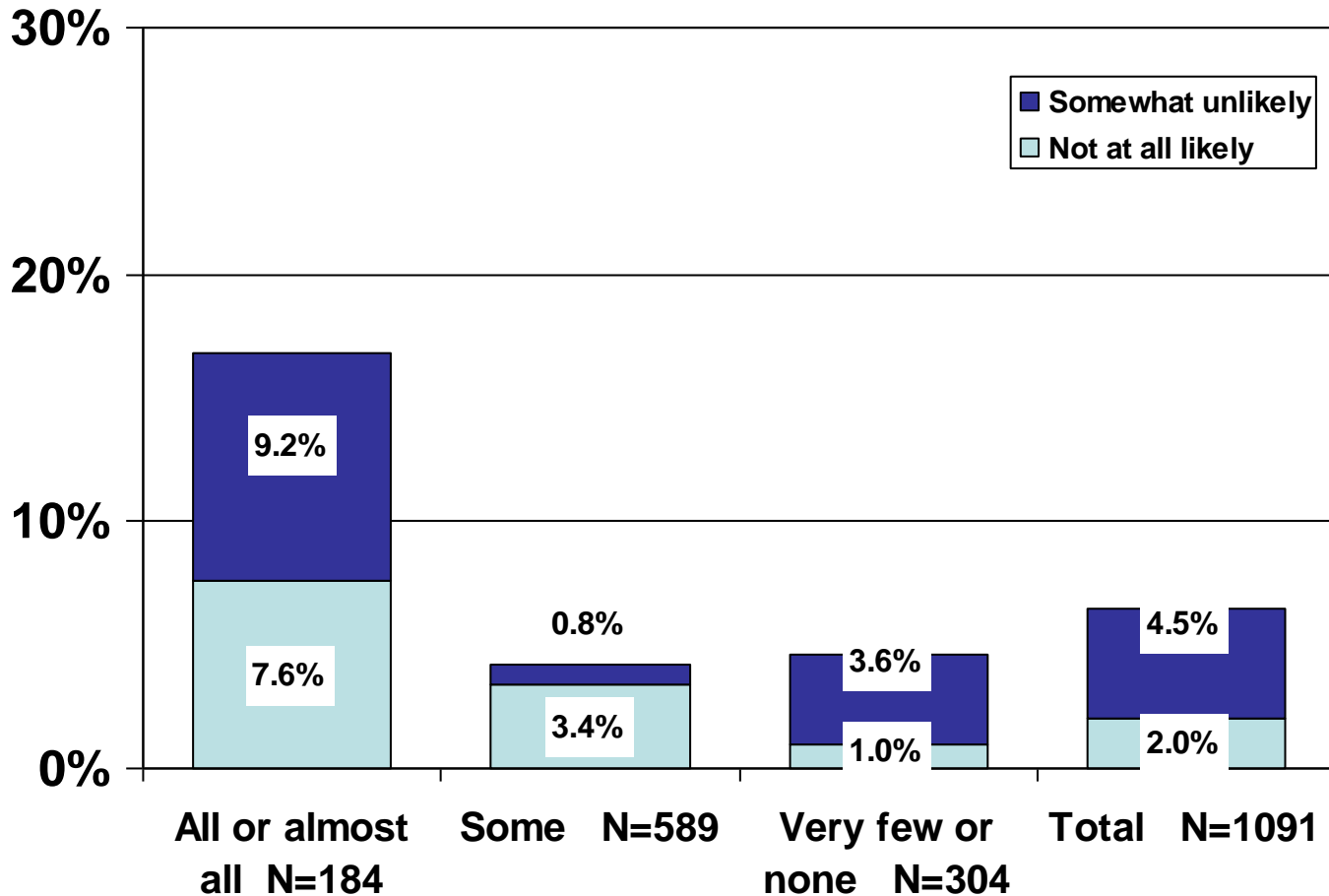
SC8d. Of all the telephone calls that you and other adults in your household receive, are all or almost all on cell phones, some received on cell phones and some on landlines phones, or very few or none on cell phones? N=1094

# Cell Phone Mainly in Dual Users: New Jersey Landline Sample



SC8e. Thinking just about the LANDLINE home phone, NOT your cell phone, if that telephone rang and someone was home, under normal circumstances, how likely would it be answered? Would you say extremely likely the landline would be answered, very likely, somewhat likely, somewhat unlikely or not at all likely the landline would be answer? N=1091

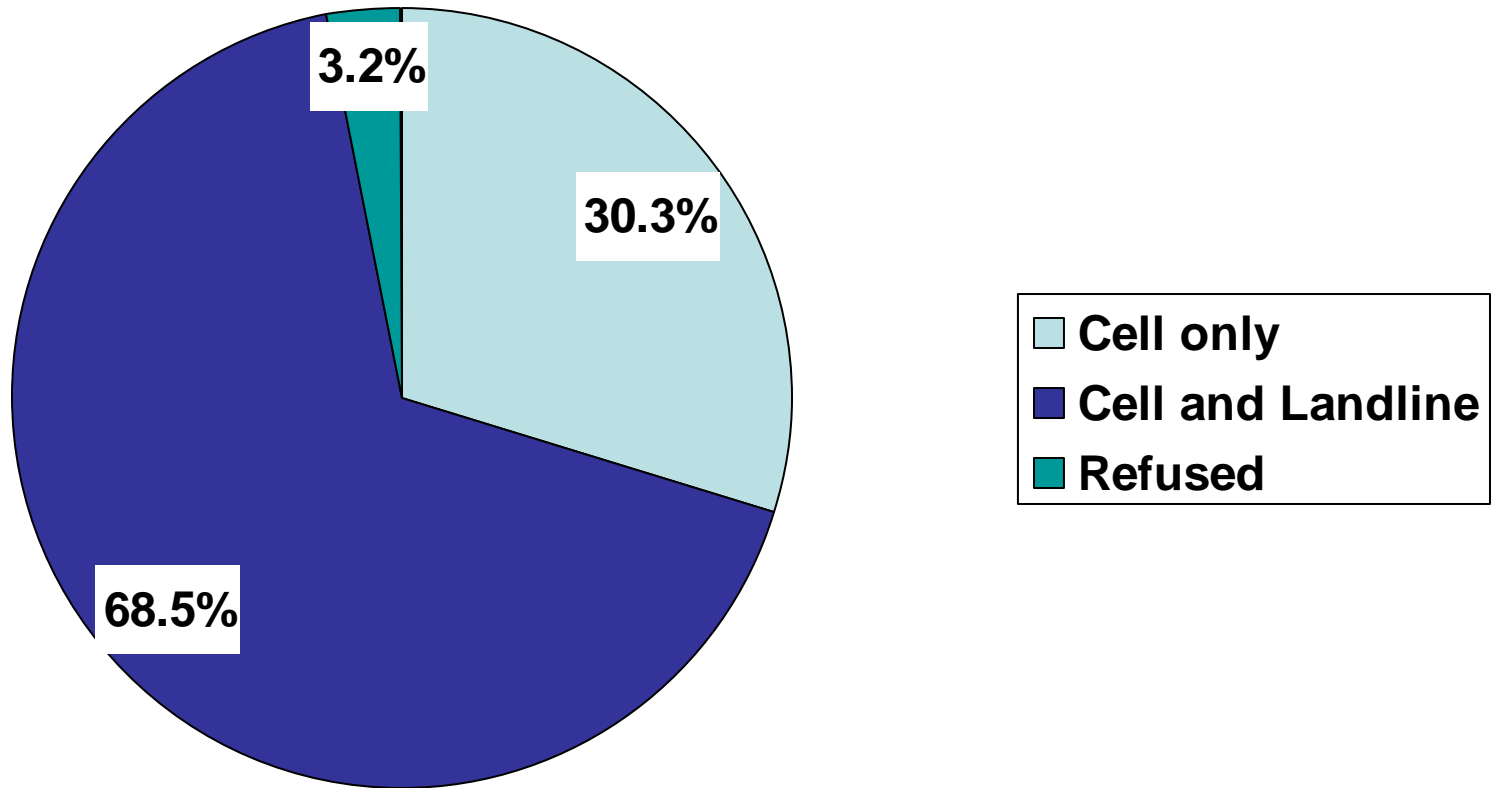
# Cell Phone Mostly and Cell Phone Mainly: Dual Users in Landline Sample



Thinking about the LANDLINE home phone, not your cell phone, if that telephone rang, and someone was home, under normal circumstances how likely would it answered – extremely likely the landline would be answered, very likely, somewhat likely, somewhat unlikely or not at all likely the landline would be answered?

Of all the telephone calls that you and other adults in your household receive, are all or almost all on cell phones, some received on cell phones and some on landline phones, or very few or none on cell phones?

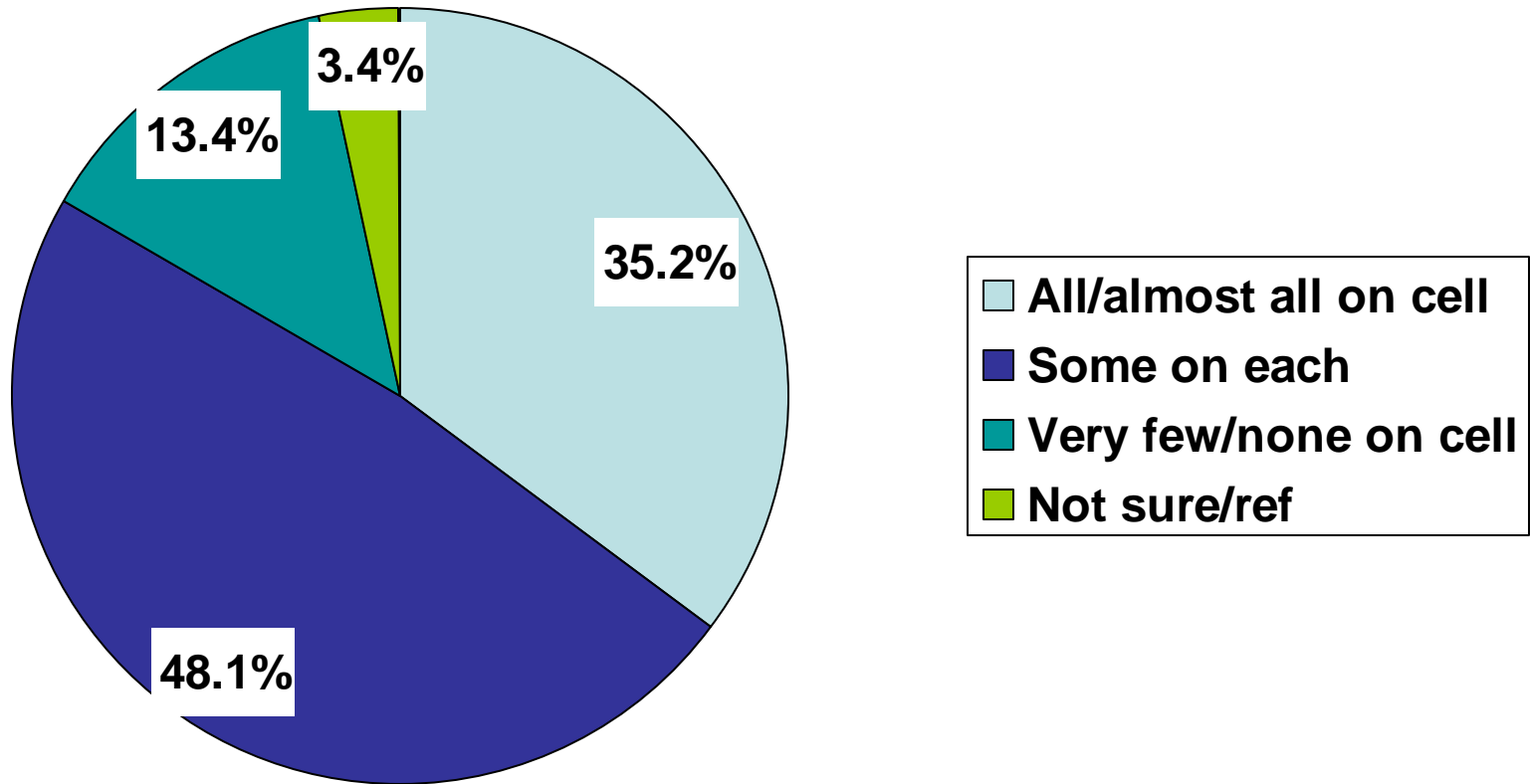
# Cell Phone Only and Dual Uses: New Jersey Cell Phone Sample



CSC1. In addition to having a cell phone, do you also have at least one landline phone in your house at which you or anyone else in the household NORMALLY receive in-coming phone calls? N=1435

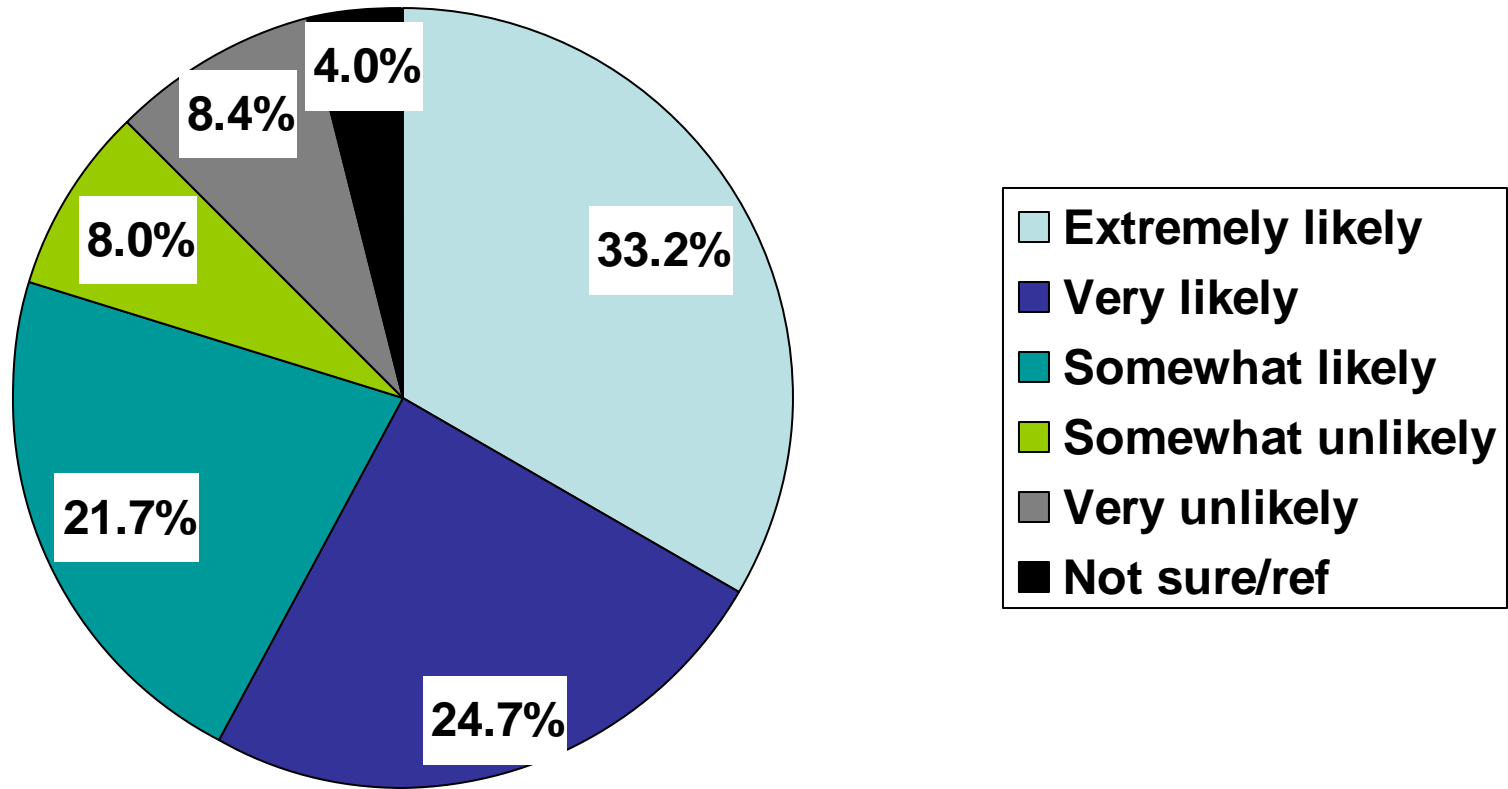


# Cell Phone Mostly in Dual Users: New Jersey Cell Phone Sample



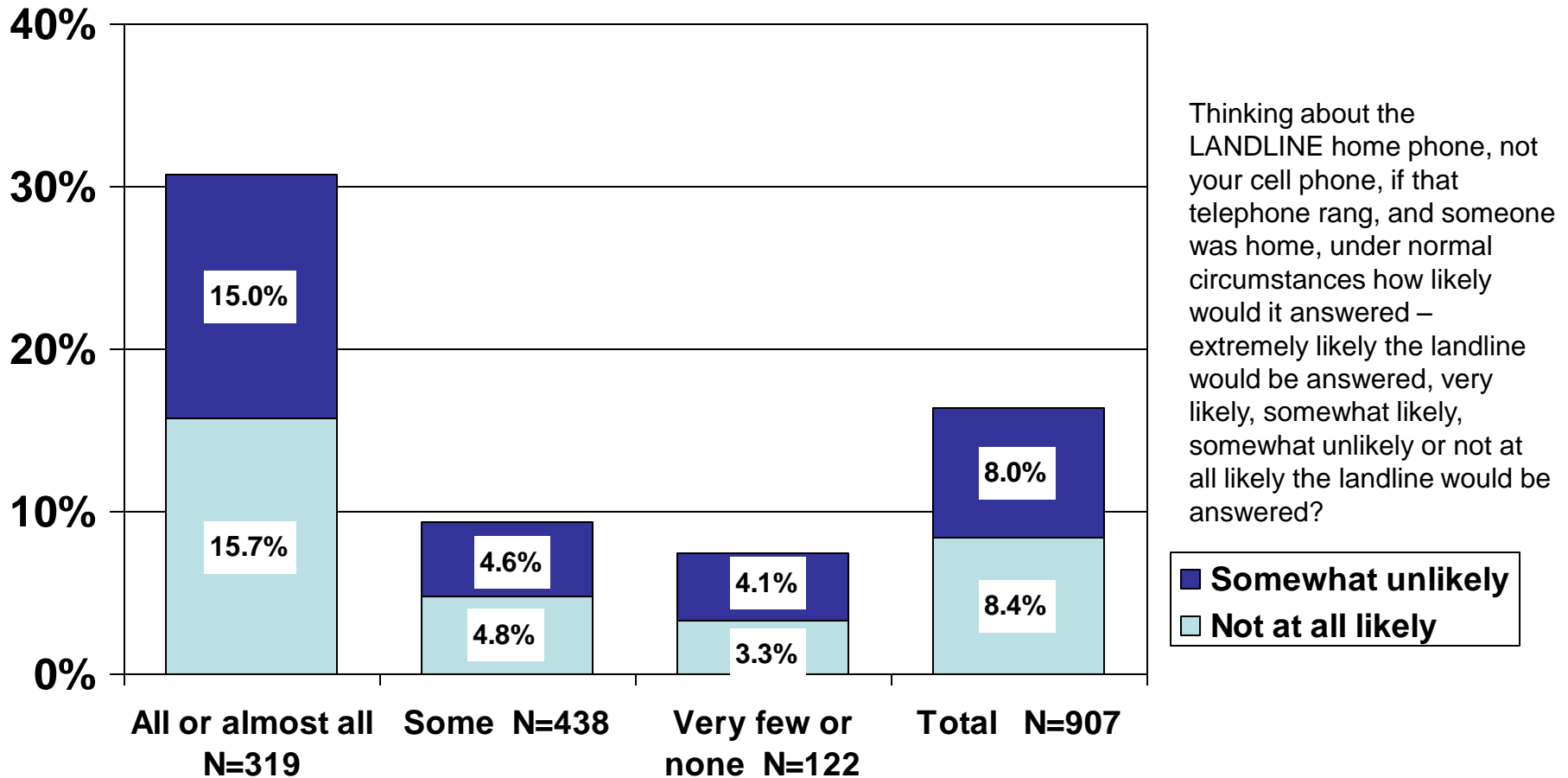
CSC1b. Of all the telephone calls that you and other adults in your household receive, are all or almost all on cell phones, some received on cell phones and some on landlines phones, or very few or none on cell phones? N=913

# Cell Phone Mainly in Dual Users: New Jersey Cell Phone Sample



CSC1c. Thinking just about the LANDLINE home phone, NOT your cell phone, if that telephone rang and someone was home, under normal circumstances, how likely would it be answered? Would you say extremely likely the landline would be answered, very likely, somewhat likely, somewhat unlikely or not at all likely the landline would be answer? N=907

# Cell Phone Mostly and Cell Phone Mainly: Dual Users in Cell Phone Sample



Of all the telephone calls that you and other adults in your household receive, are all or almost all on cell phones, some received on cell phones and some on landline phones, or very few or none on cell phones?

# Coverage versus Reach: Cell Phone Mostly in Landline and Cell Phone Samples

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- Dual users represent 89% of landline sample
  - 16.9% of dual users are cell phone mostly
  - 6.5% of dual users are cell phone mainly (unlikely to respond to landline call)
  - 16.8% of cell phone mostly are cell phone mainly
- Dual users represent 70% of cell phone sample
  - 35.2% of dual users are cell phone mostly
  - 16.4% are cell phone mainly
  - 30.7% of cell phone mostly are cell phone mainly

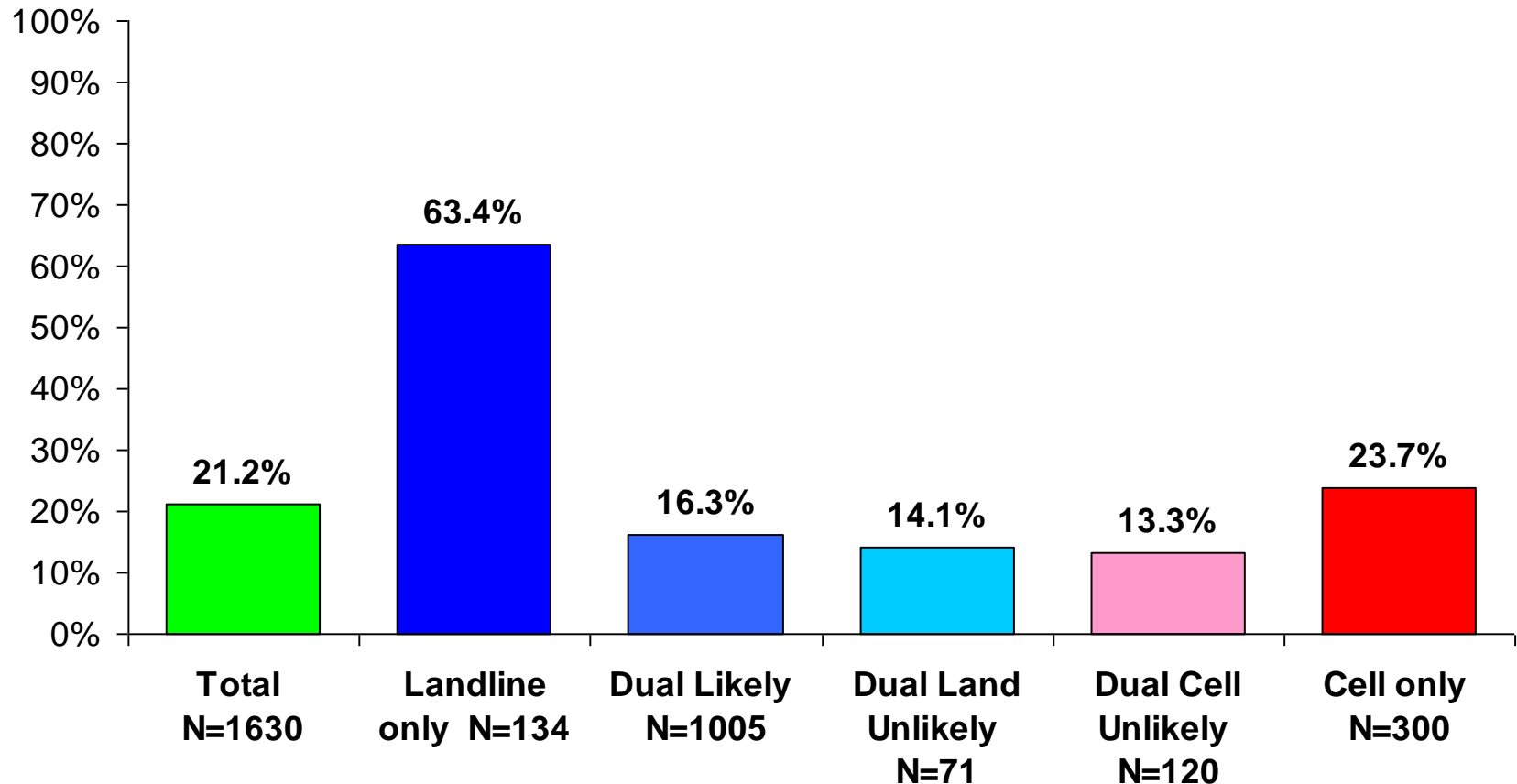
# Telephone User Segments In Dual Frame Telephone Surveys

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- Landline only
- Landline and cell from landline sample
  - Likely to answer landline calls
  - Unlikely to answer landline calls
- Landline and cell from cell phone sample
  - Unlikely to answer landline calls
- Cell phone only

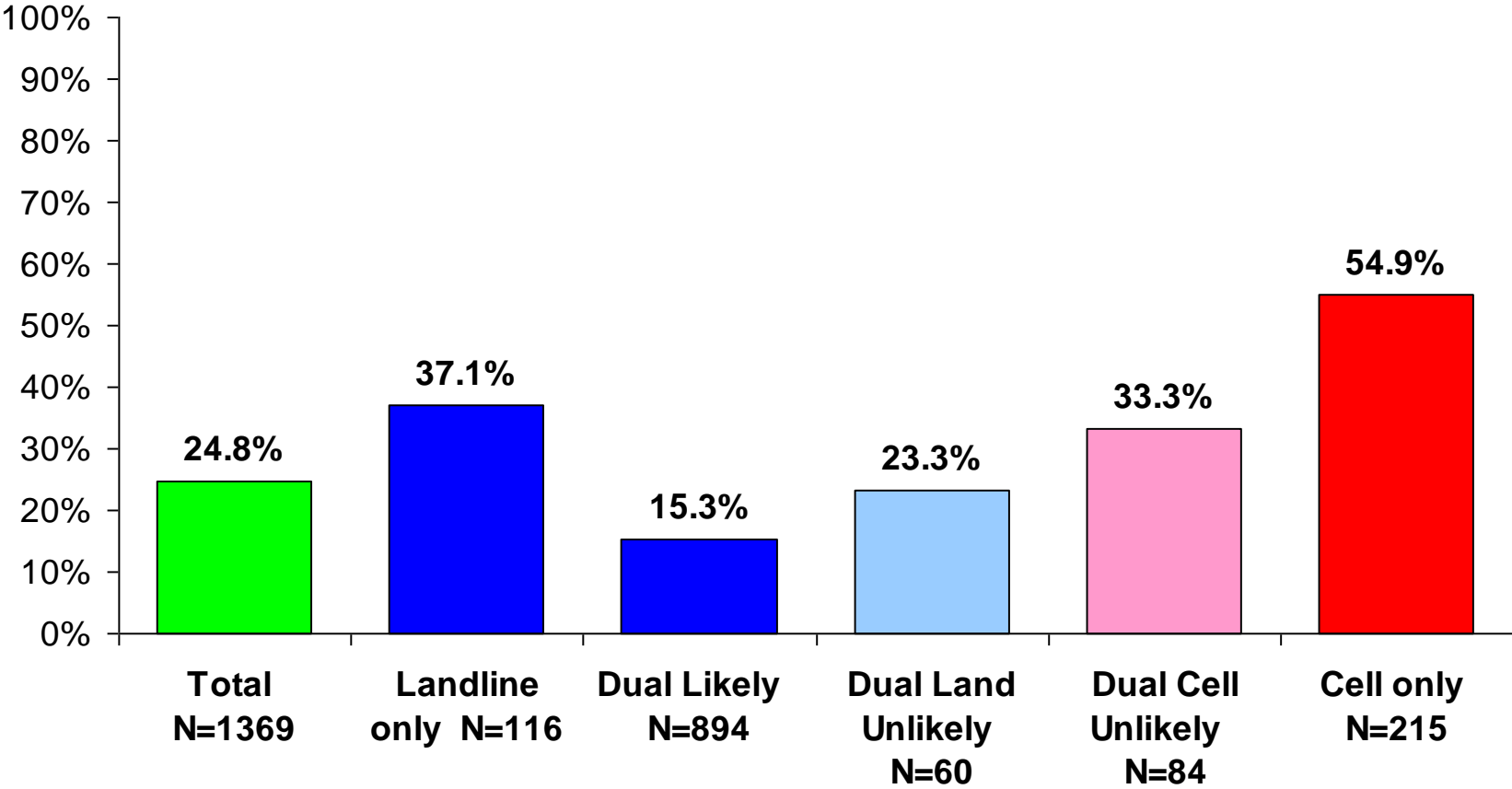
# Household Size:

## 1 Person in household



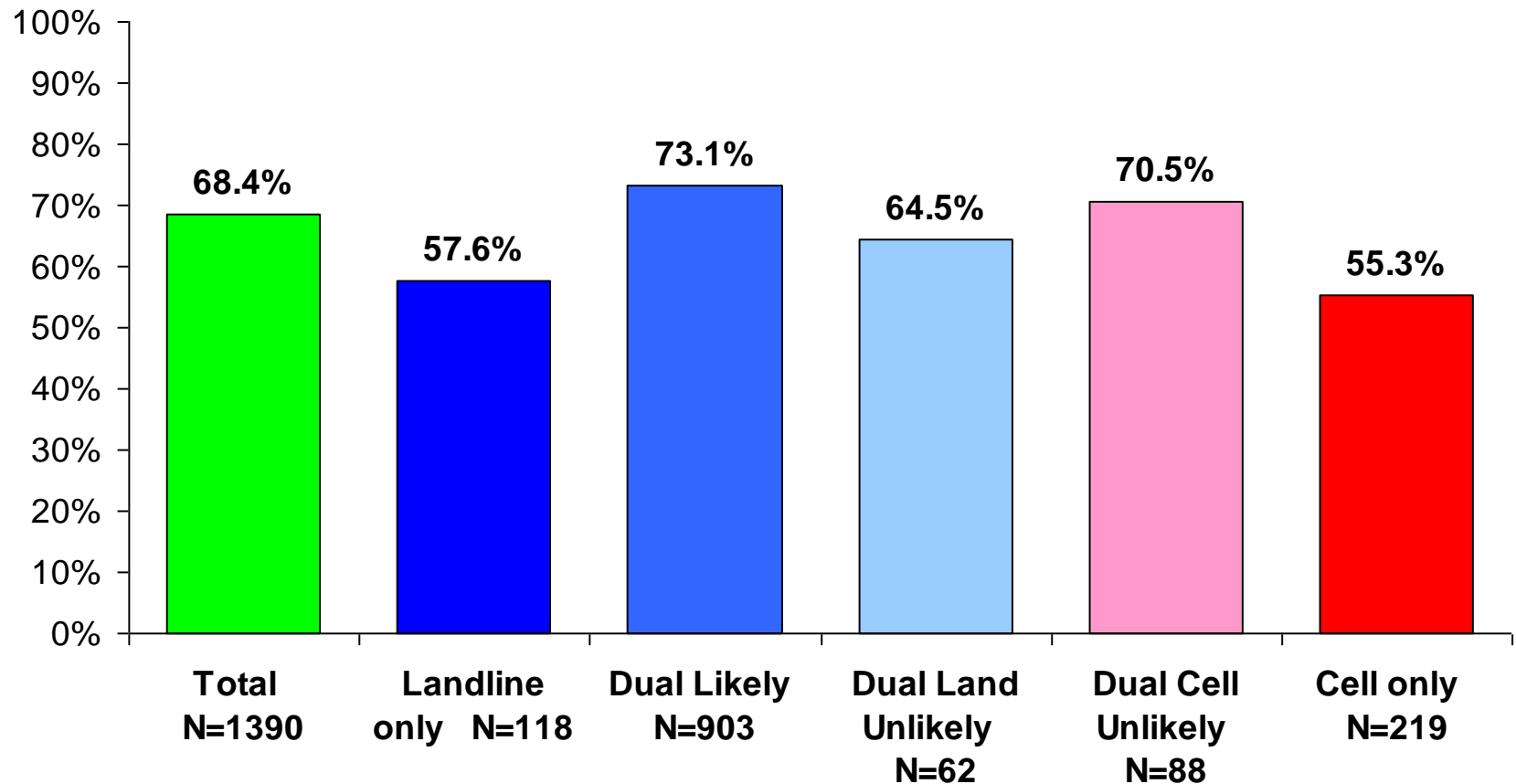
SC3. I need to know how many people, INCLUDING YOURSELF AND INCLUDING INFANTS, live in this household?

# Household Tenure: Rented for cash



H29. Is your home or apartment ... ?

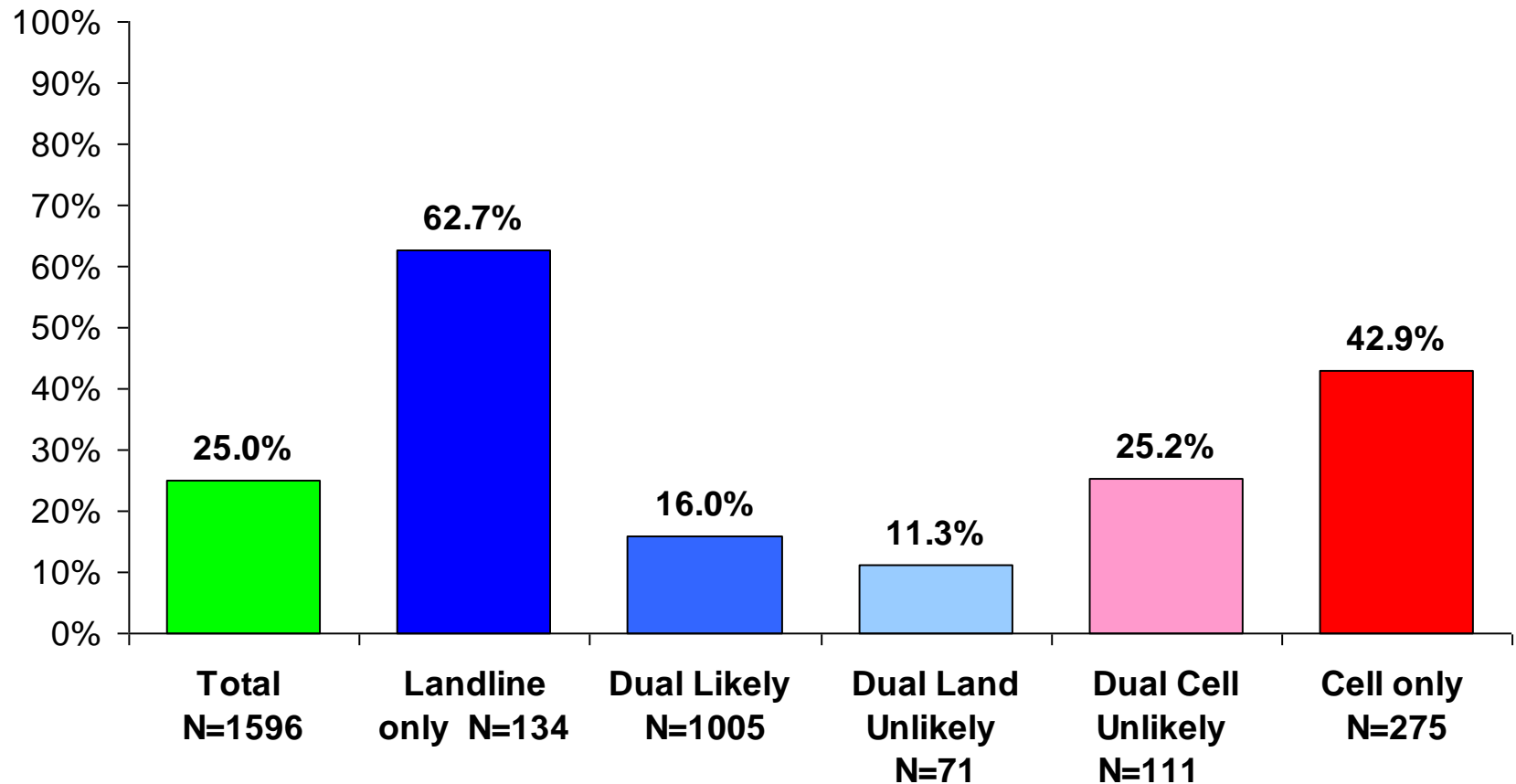
# Neighborhood Characteristics: Very safe from criminal activity



E5. Thinking about criminal activity, how safe is it to walk, run, bike, or play in your neighborhood?



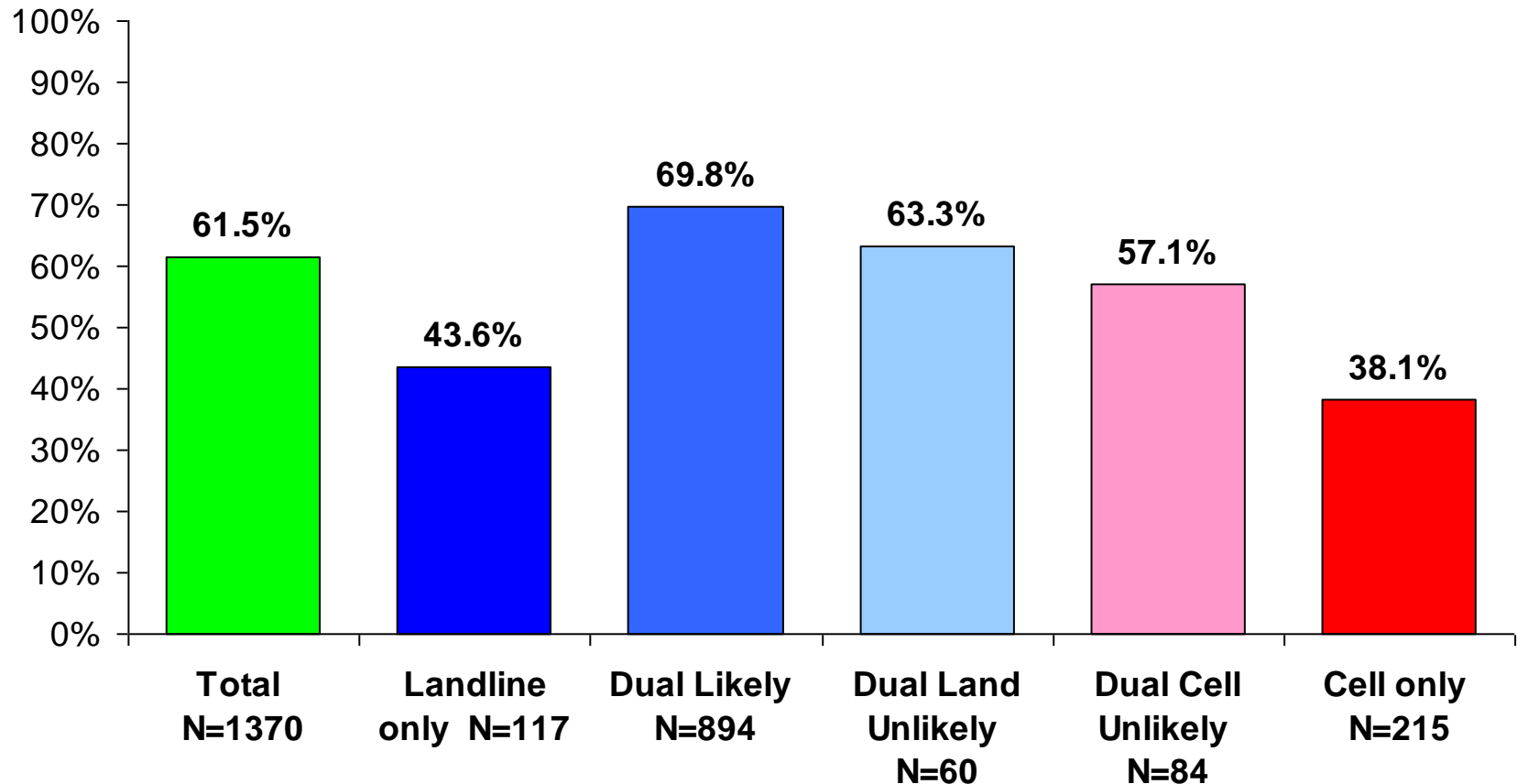
# Household Income and Household Size: Under 200% of Poverty Level



SC5. It is important for the study to include households in a wide variety of economic situations. In order to do this... ?

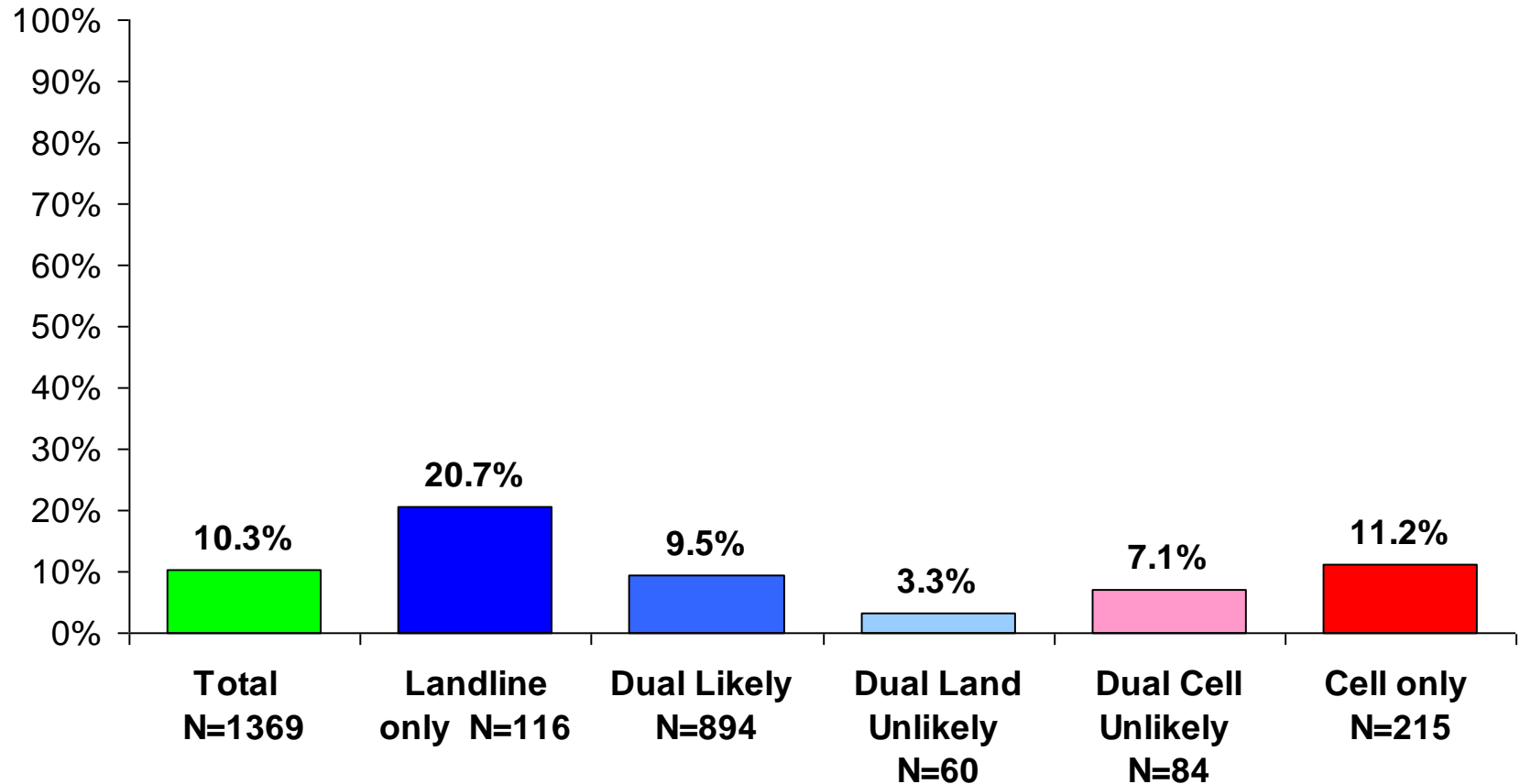
# Amount of Assets:

## Worth \$50,000 or more (not including house)



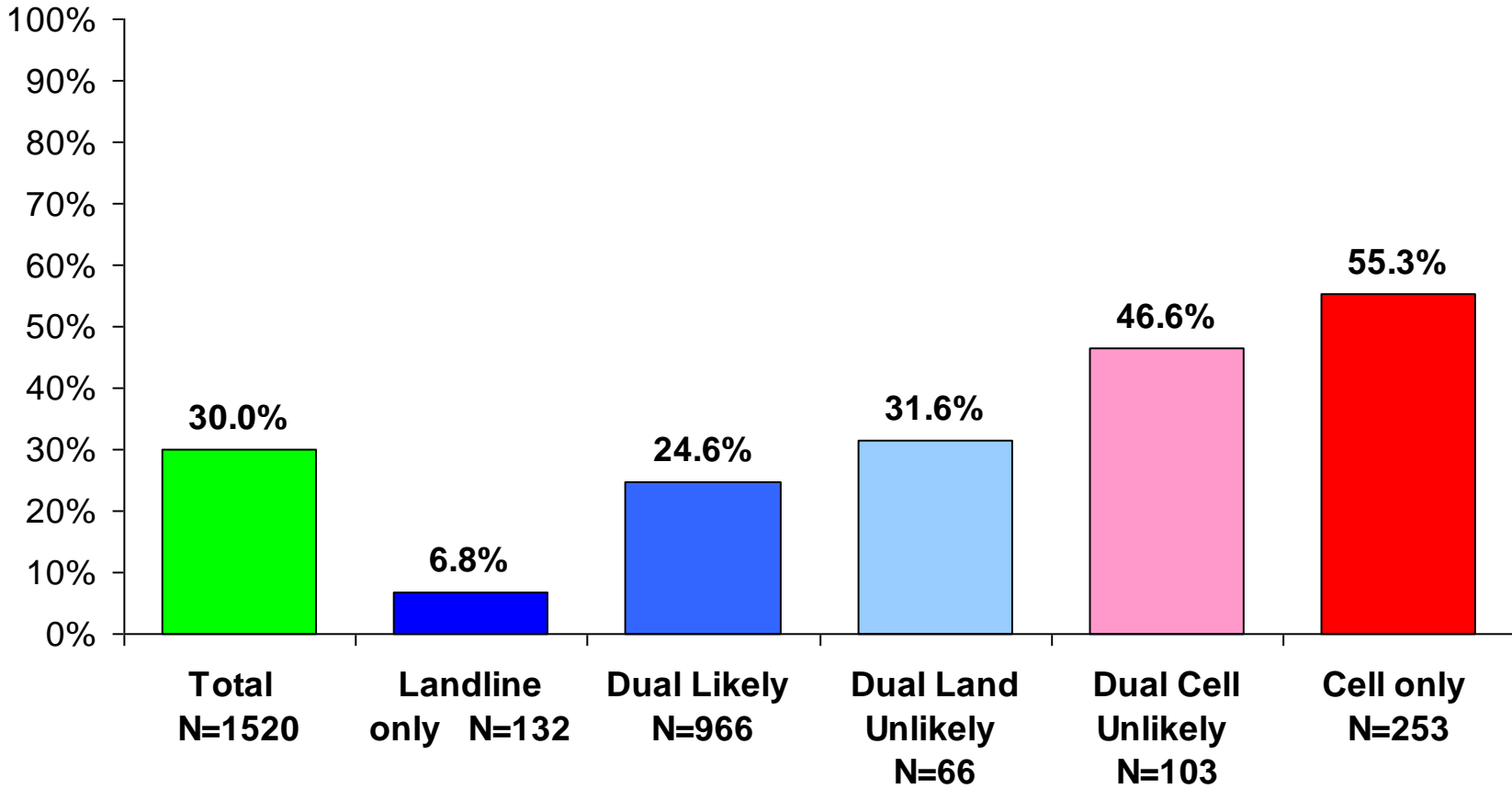
H24. Not counting the value of your primary home you may own, would you say that (your/your family's) assets, that is your savings, including retirement, and all other personal (and family) valuables together are worth more than \$50,000?

# Government Assistance: Received SSI, SSDI, Food Stamps or other



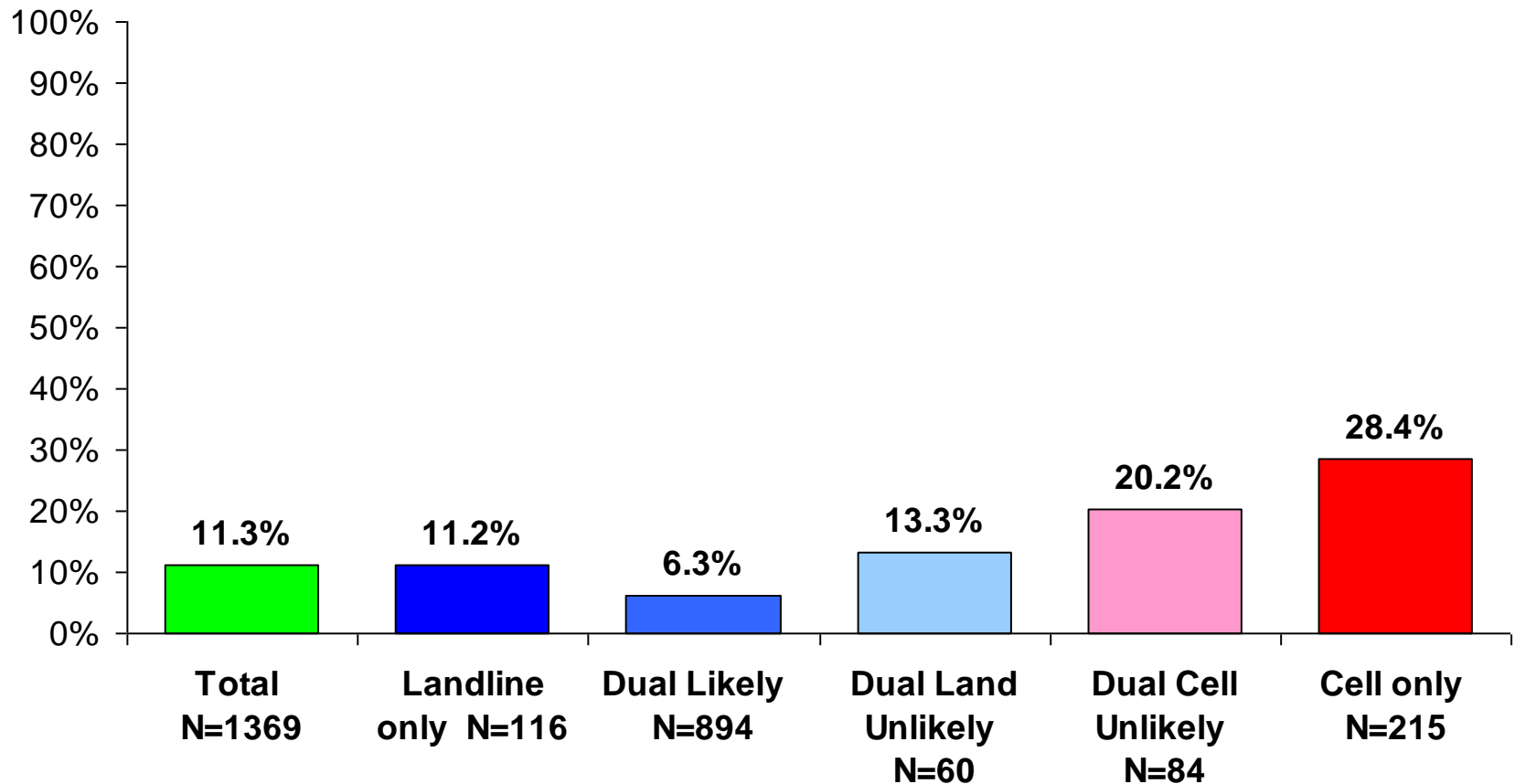
H25. During the year 2008, did (you/anyone in your household) receive any government assistance such as SSI, SSDI, food stamps, TANF (TANIF), or any other public assistance or welfare payments?

# Age and Marital Status: Unmarried and 19-30 years old



N=1814

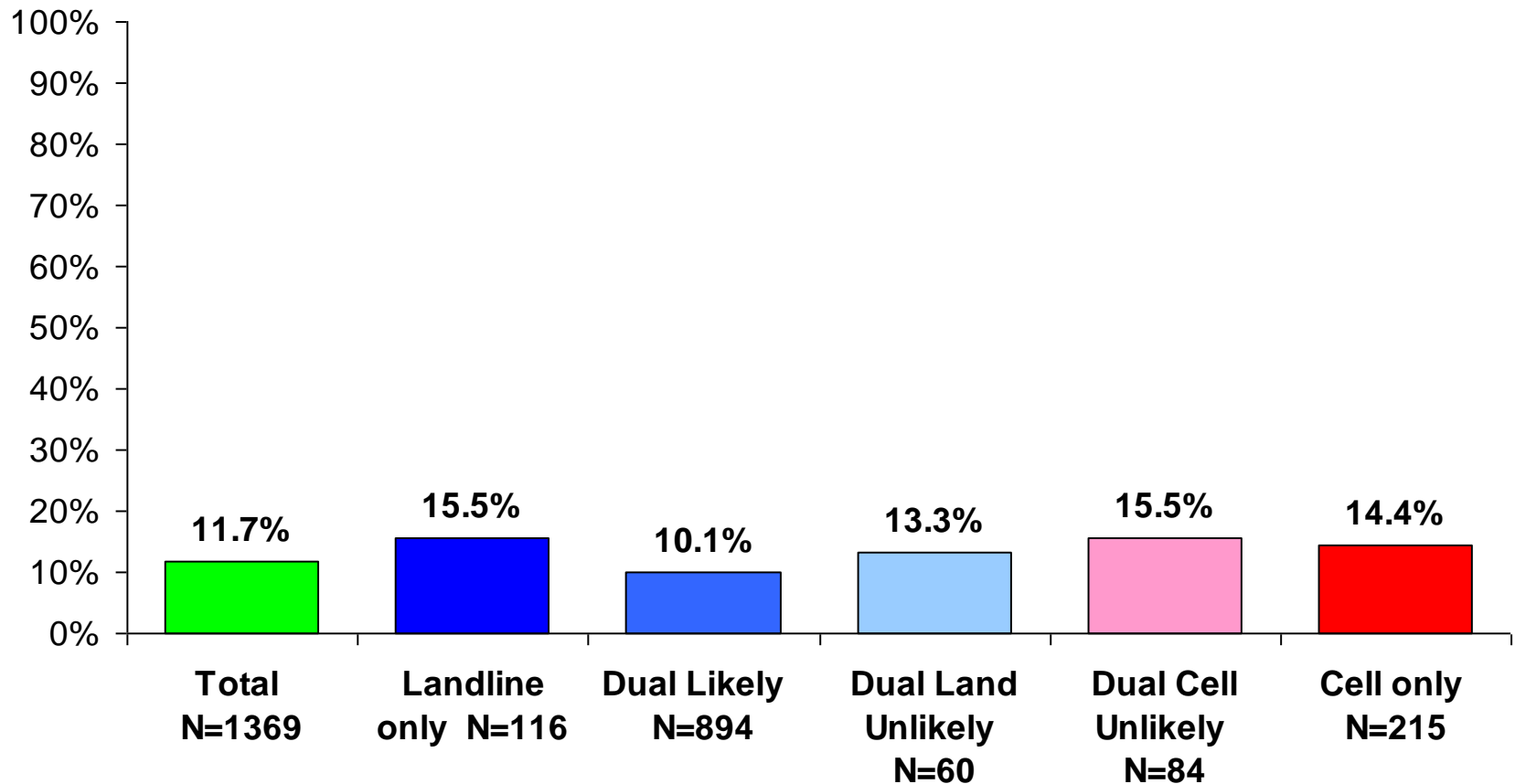
# Ethnicity: Hispanic or Latino



I1c. Are you of Spanish, Hispanic or Latino origin or descent?

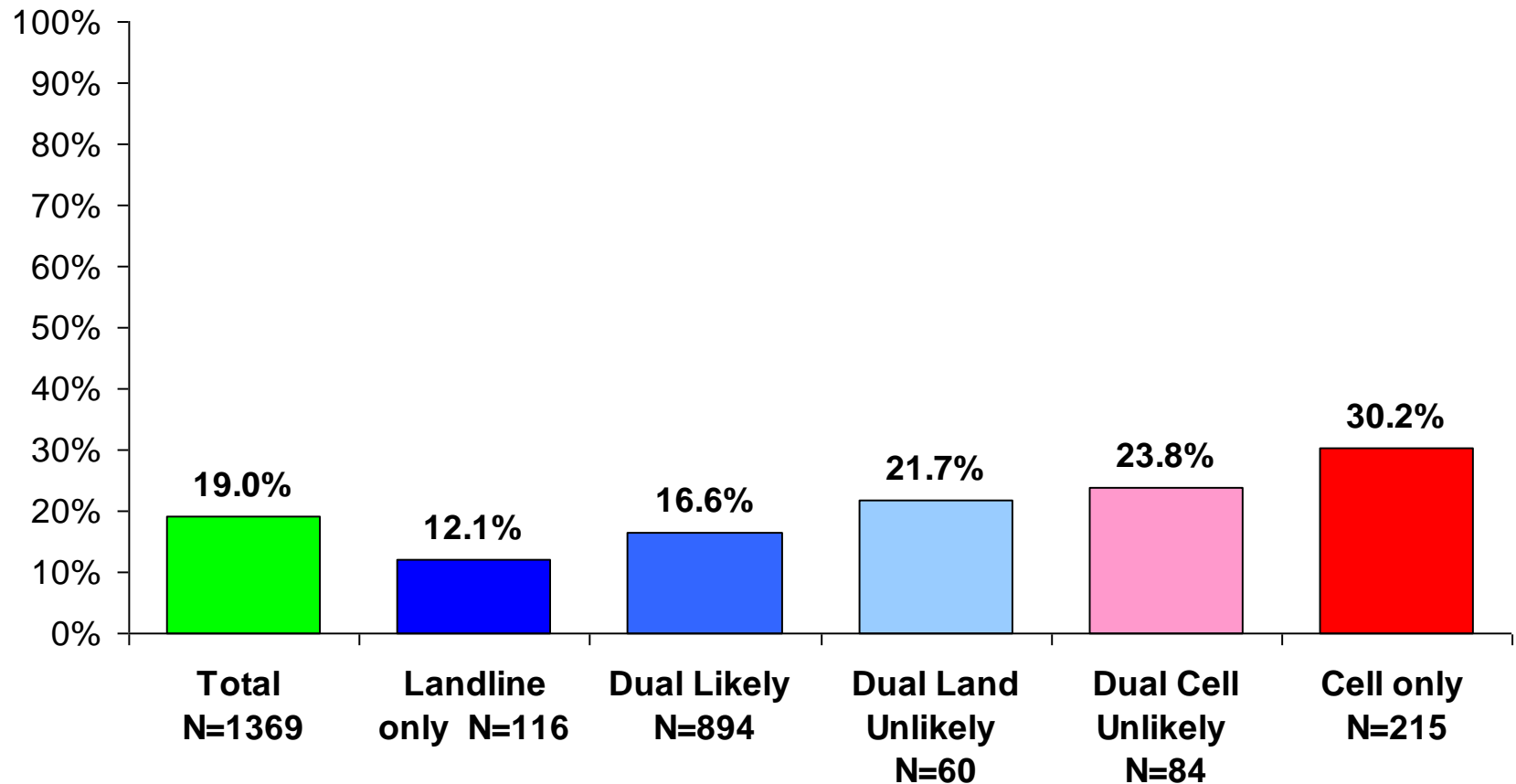
# Race:

## Black or African-American



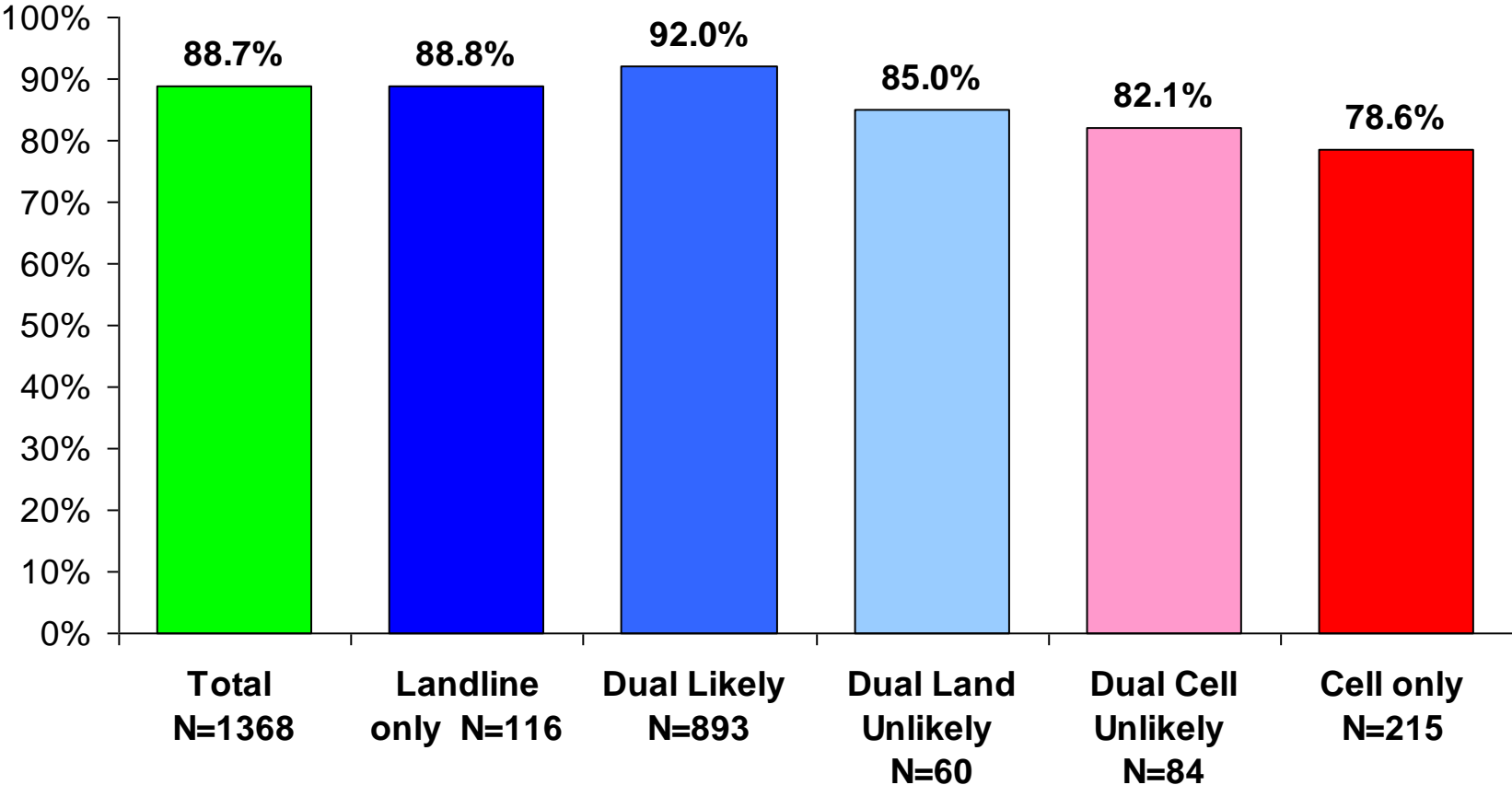
I3. What is your race?

# Born outside of the United States: Yes



14. (Were you/was anyone in your family) born outside of the United States, Puerto Rico, or other U.S. territories?

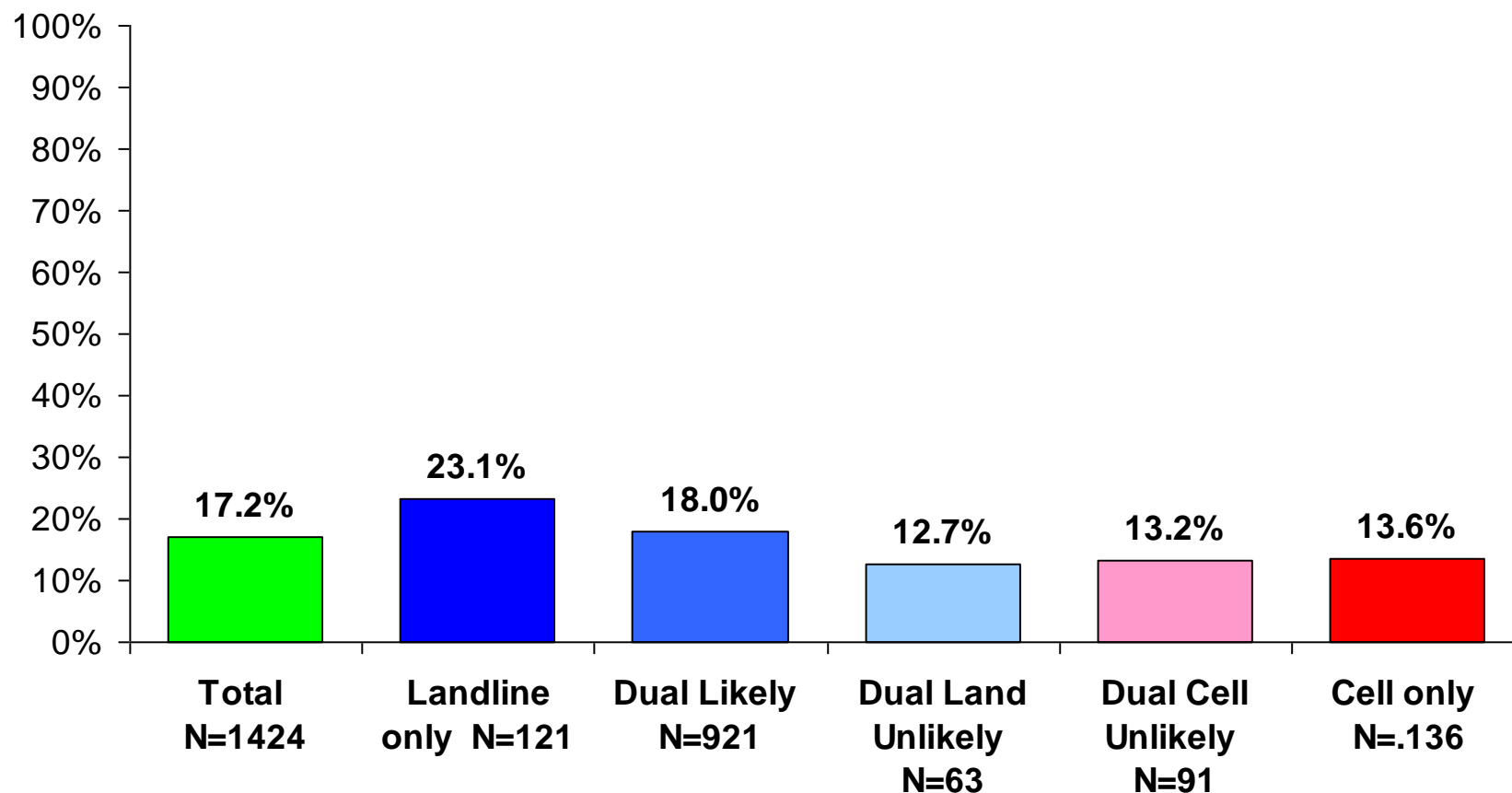
# Primary language spoken at home: English



19. What is the primary language spoken in your home?

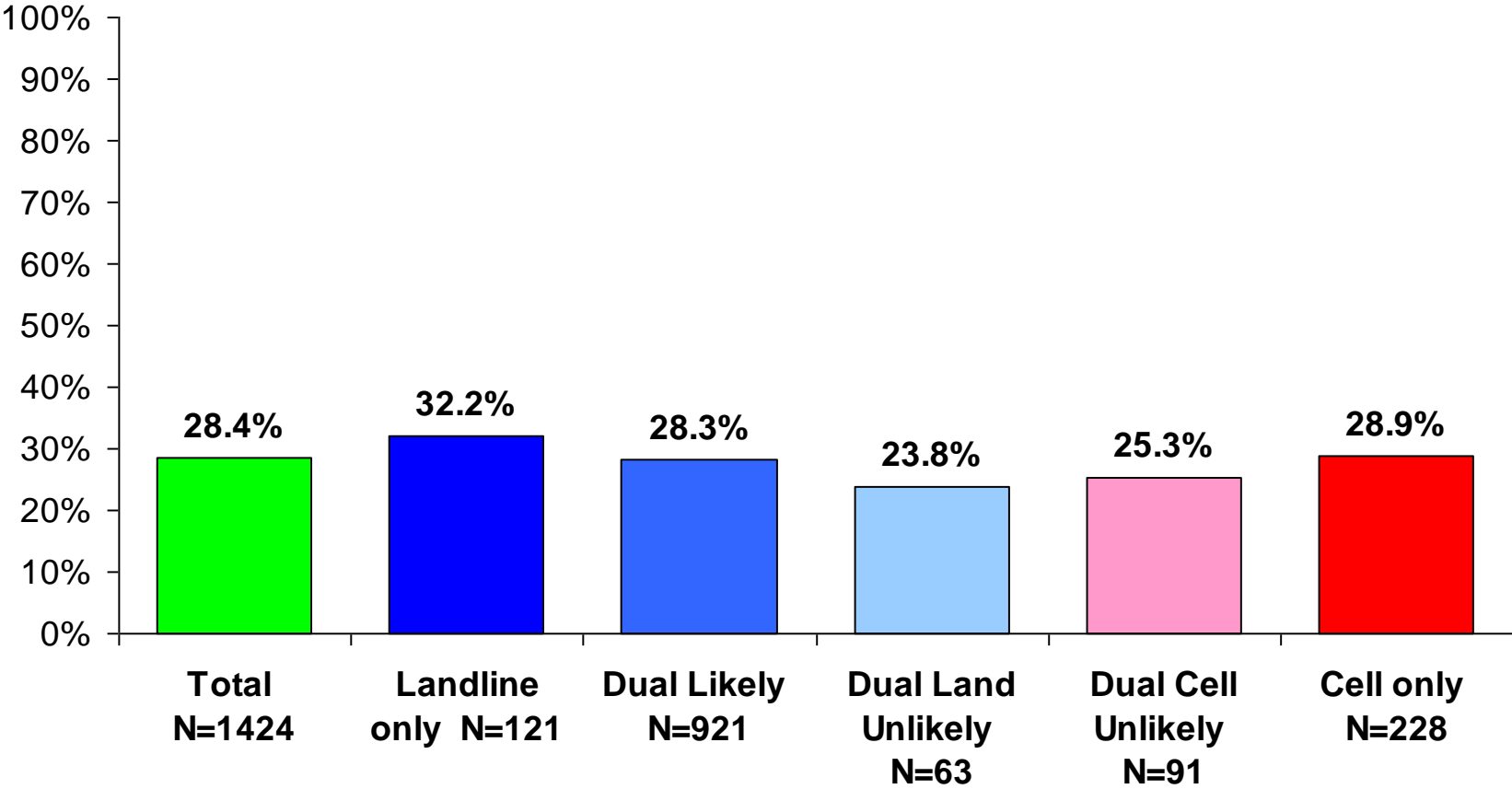


# Medical Utilization: Hospitalized in Past 12 months



C1. During the past 12 months, were you (or was anyone in your family) a patient in a hospital overnight?

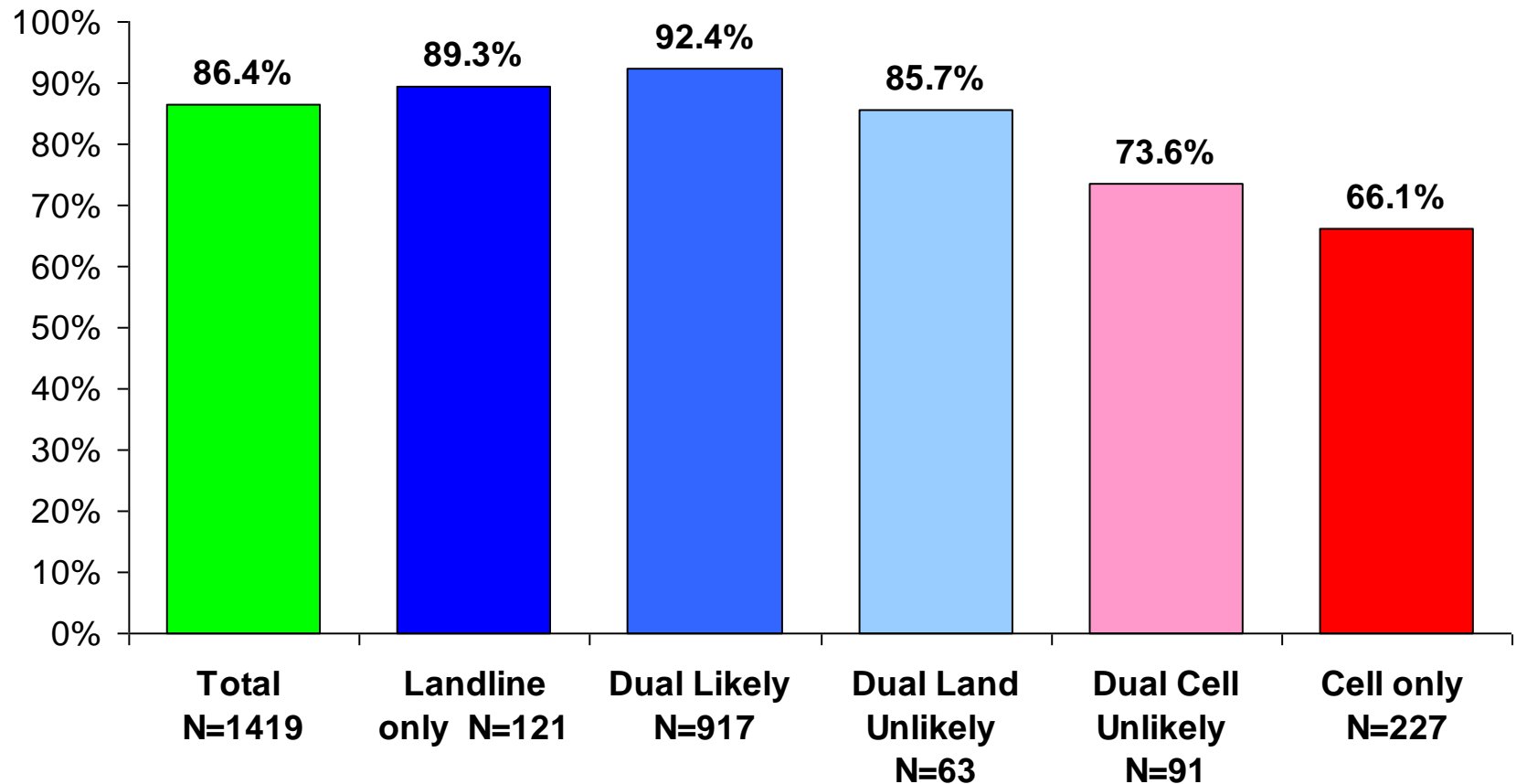
# Medical Utilization: Emergency Room in Past 12 months



C5. During the past 12 months, did you (or anyone in your family) go to a hospital emergency room?

# Medical Utilization:

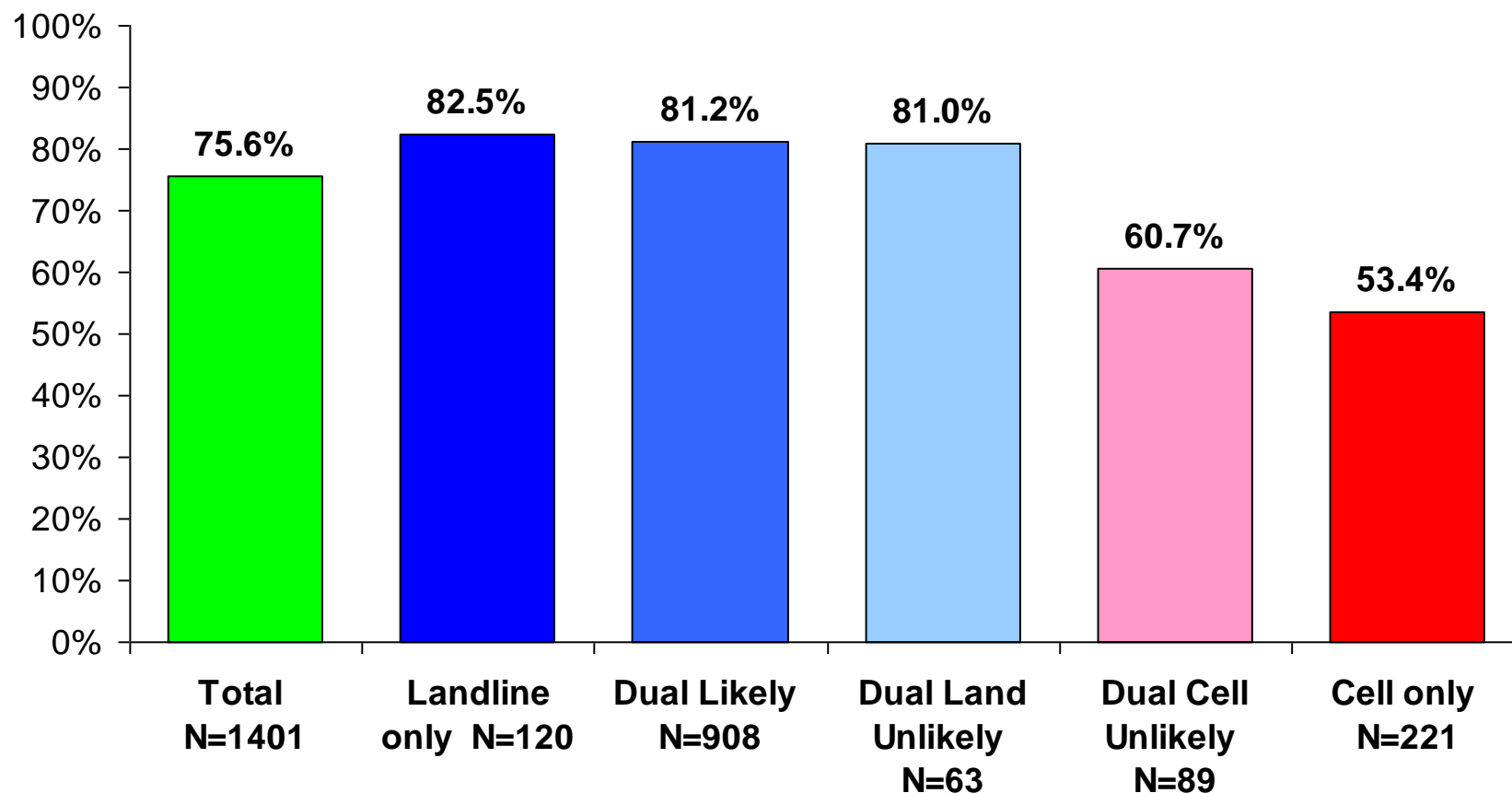
## Seen a doctor (or NP) in past 12 months



C6. During the past 12 months have you (or anyone in your family) been to see a doctor or a nurse practitioner?

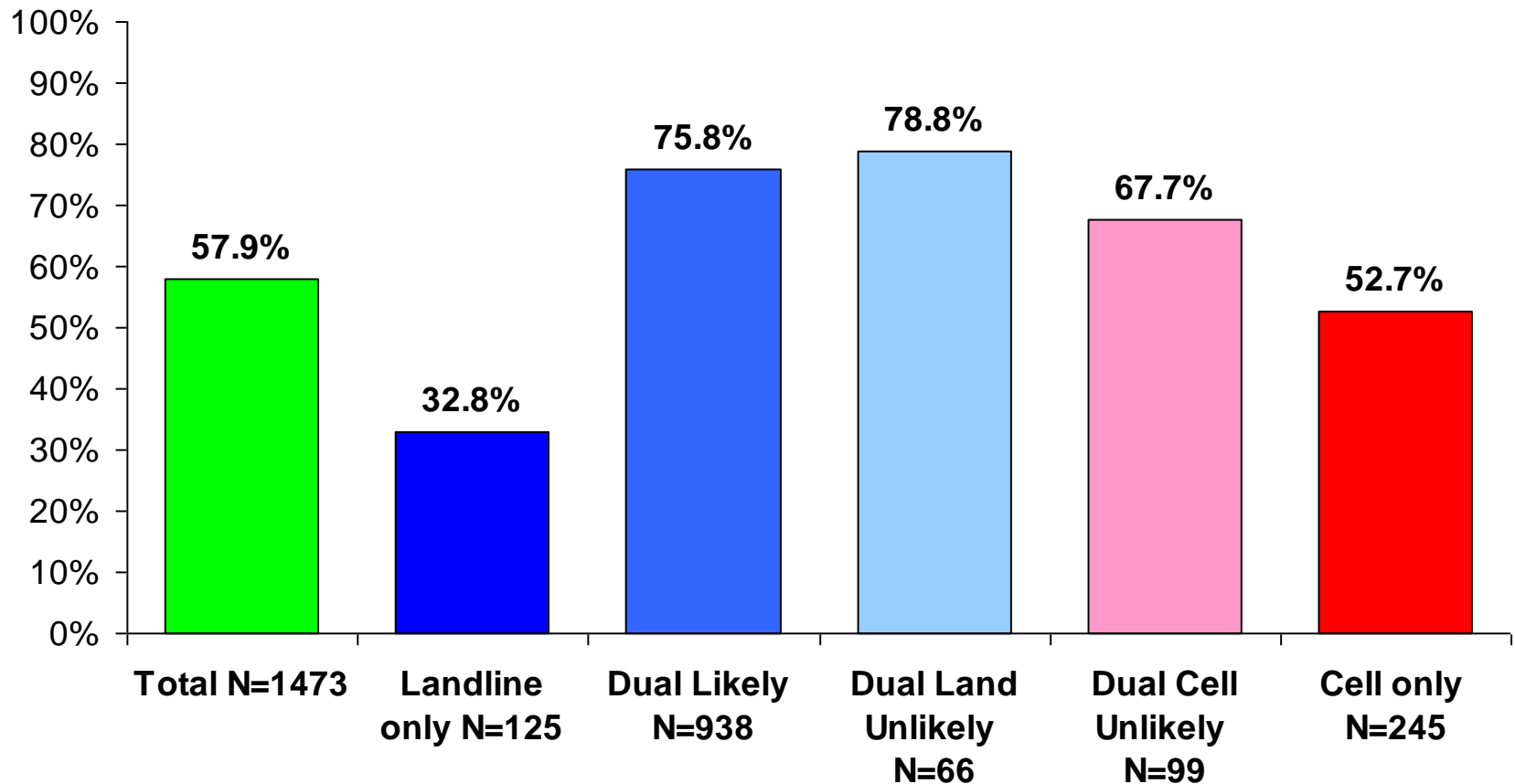
# Medical Utilization:

## Taken prescription medications in past month



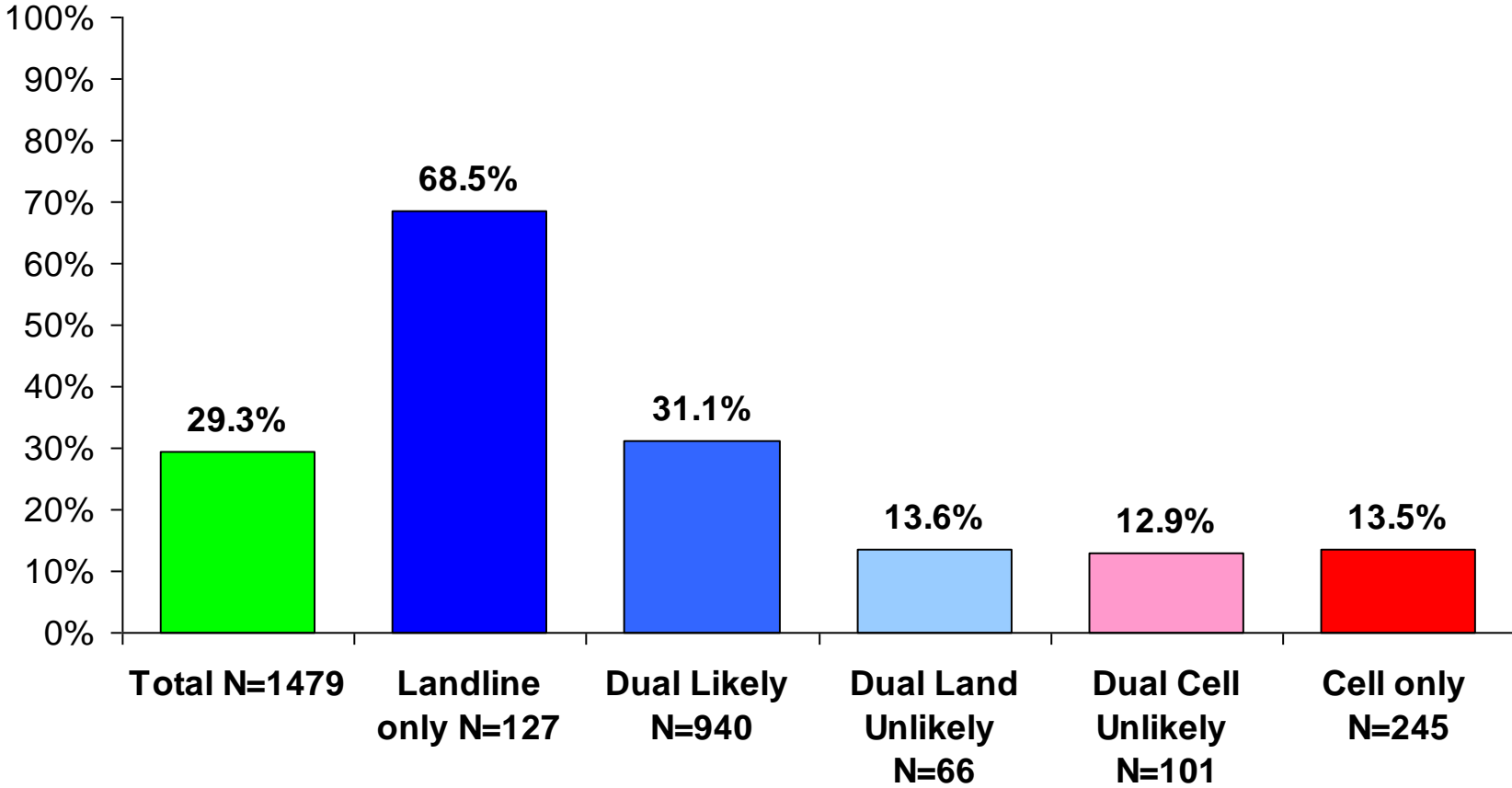
C16d. In the last month have you (or anyone in your family) taken any prescription medicines?

# Health insurance: Employer plans



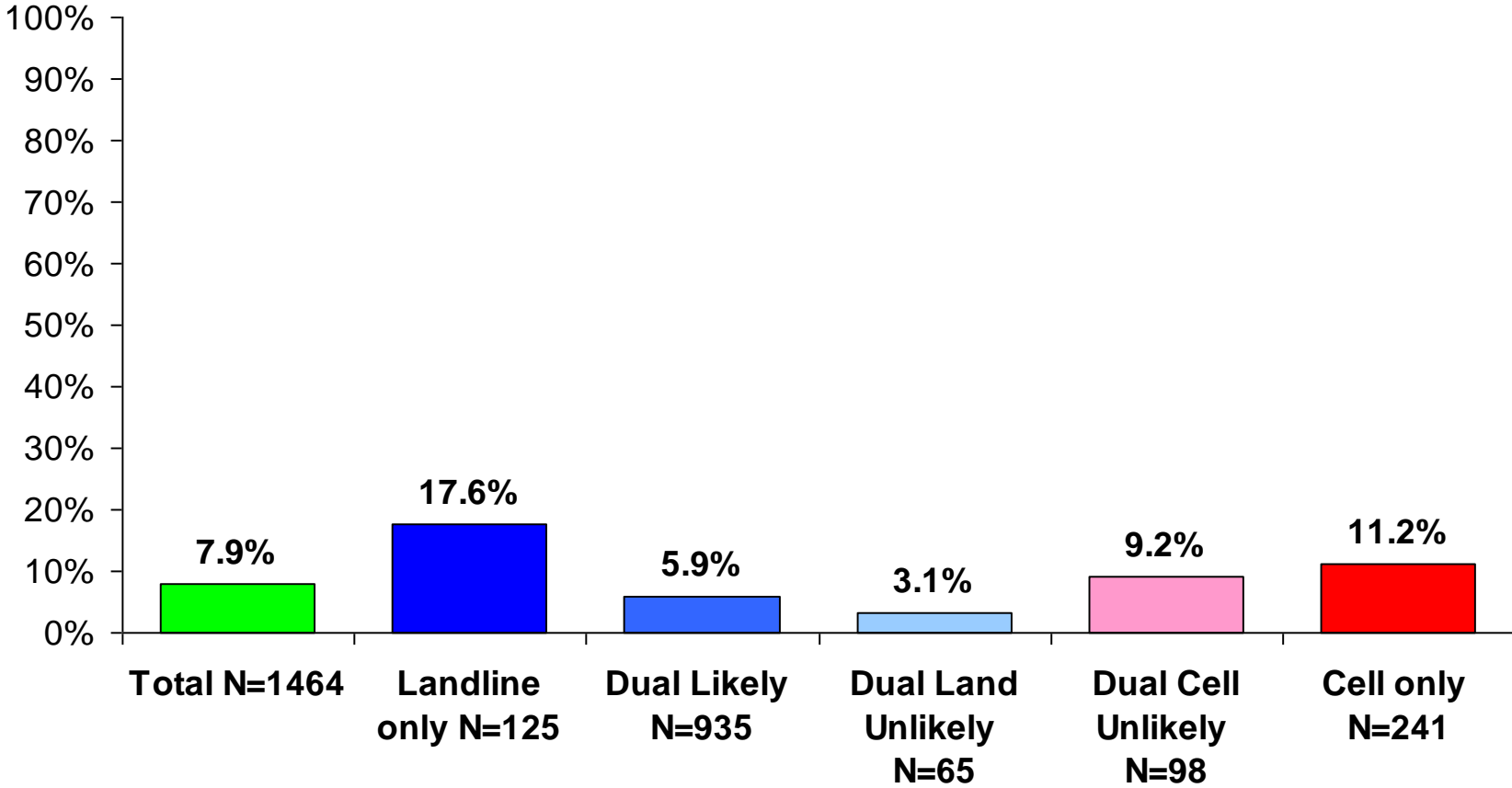
A29. At this time (are you/is anyone in the family) covered by a health plan provided through a current or former employer or union, NOT INCLUDING MILITARY EMPLOYERS?

# Health insurance: Medicare



A29. At this time (are you/is anyone in the family) covered by MEDICARE, the health program for people 65 years and older or for people with certain disabilities?

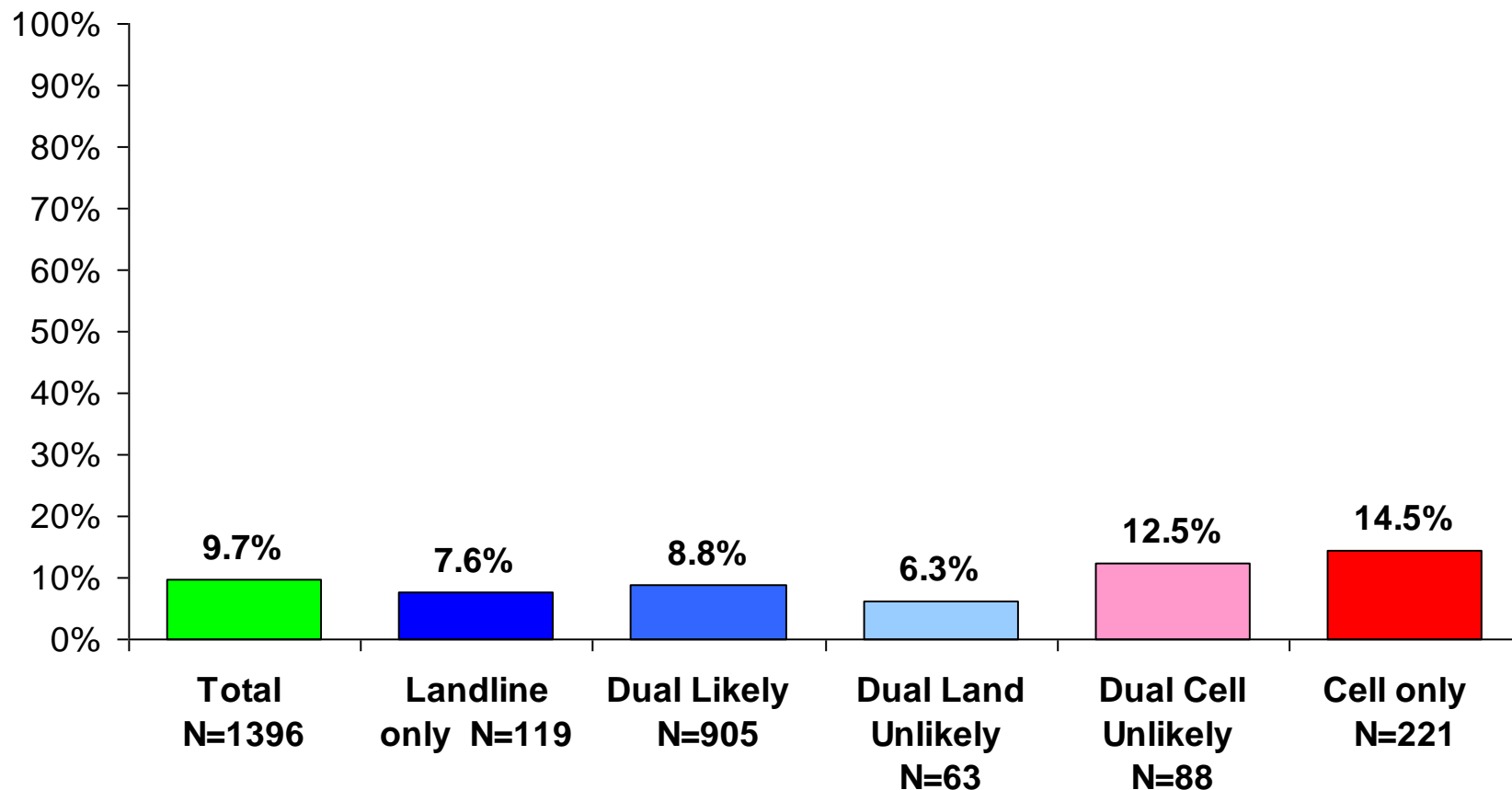
# Health insurance: Medicaid



A29. At this time (are you/is anyone in the family) covered by MEDICAID?

# Cost and Treatment:

## Difficulty in getting medical care in past 12 months

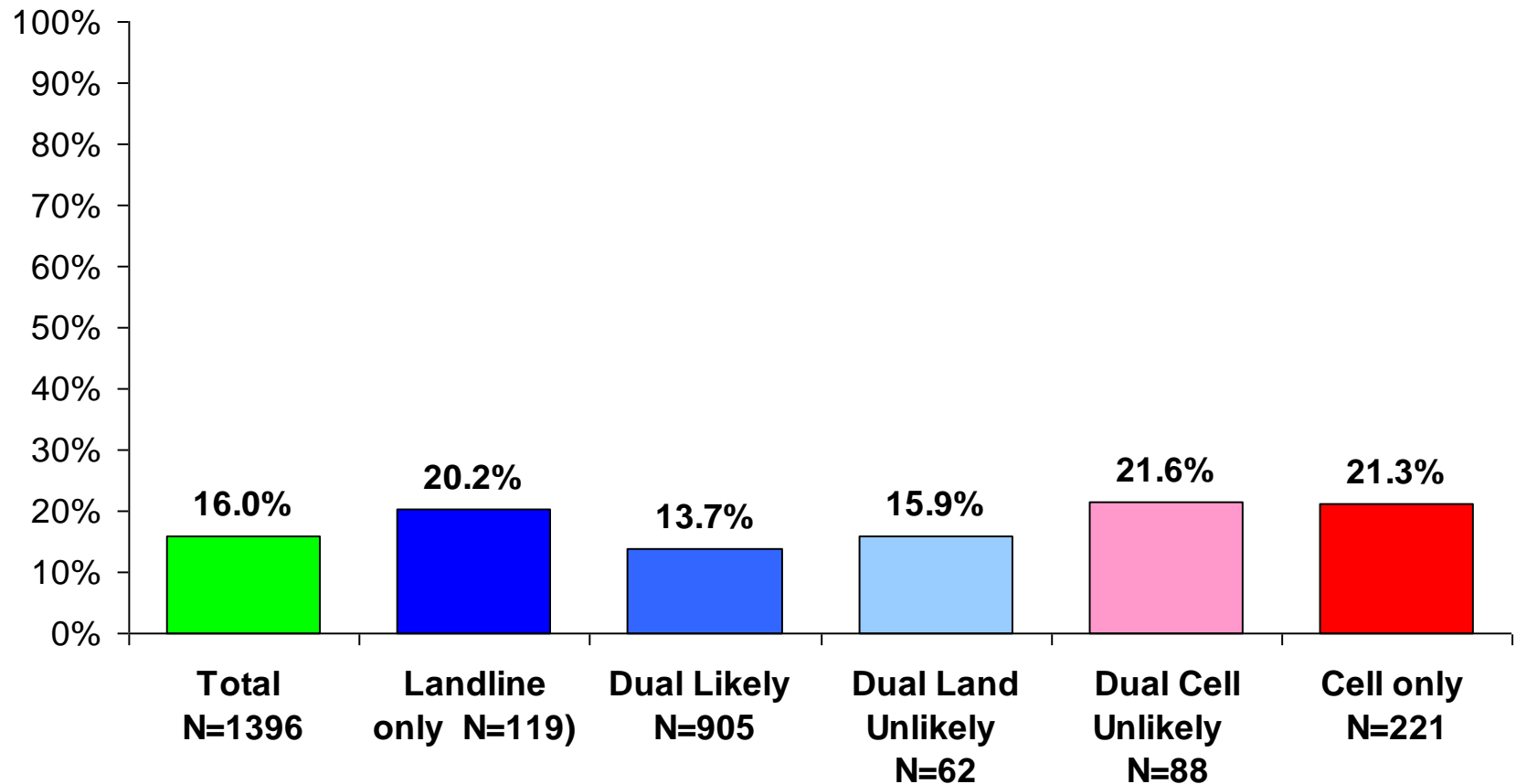


D3. During the past 12 months, was there a time when (you, someone in your family) wanted medical care or surgery but could not get it at that time?



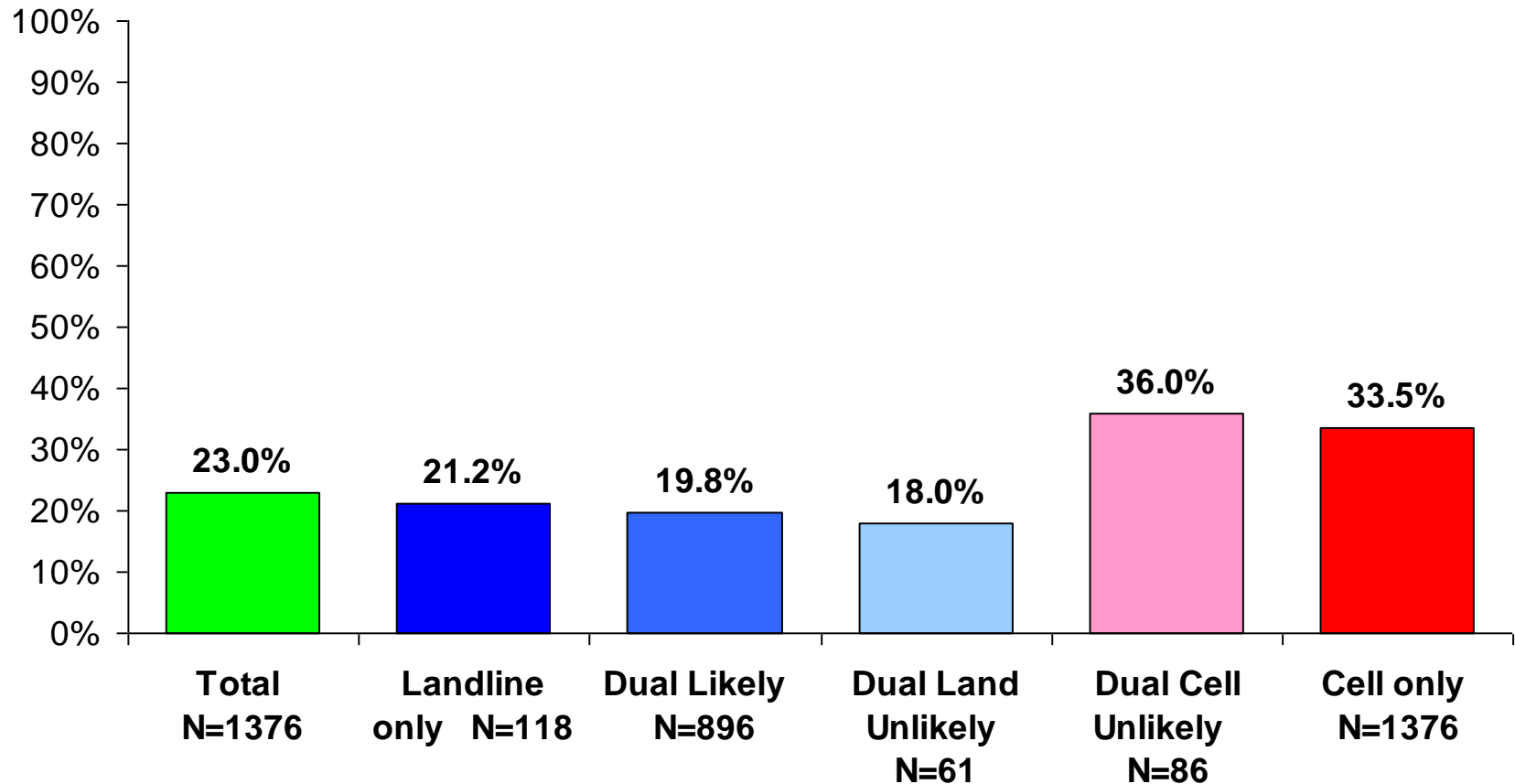
# Cost and Treatment:

## Delayed or did not get prescription due to cost



D7. During the past 12 months, was there a time when you (or someone in your family) didn't get or delayed getting a prescription because it cost too much?

# Health Risk Behaviors: Smoking



E39. Do you (or does anyone in the family) smoke cigarettes, cigars or pipes?

# EMPIRICAL OBSERVATIONS

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- The proportion of telephone calls received on cell phone by dual users (cell phone mostly) has only a limited effect on willingness to answer landline calls at home (only 16.8% of cell phone mostly would be somewhat unlikely or not at all likely to answer their landline if it rang)
- Cell phone mainly population is only a fraction of the total size of the cell phone mostly population (6.5% versus 16.9% of dual users in landline sample)
- Cell phone mainly from cell phone samples are more similar to cell only than cell mainly from landline samples
- Landline only are as distinct from dual users and cell phone only respondents

# DISCUSSION

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- A segment of the population with both cell phones and landlines claims to be unlikely to answer their landlines if called
- Cell phone “mainly” segments are found in both landline and cell phone samples
- “Mainly” population in cell phone sample has different characteristics from the “mainly” population in landline samples, who did answer their landline for the survey
- Cell phone mainly segments should be identified in both landline and cell phone samples of dual frame surveys
- Estimating the size of the population and the appropriate weighting of the sample from the two frames will be a challenge
- However, the cell phone mostly population, which does have external population parameters at the national level, does not adequately address the unrepresented and under-represented households in telephone surveys