Evaluation of NAACCR Hispanic Identification Algorithm (NHIA) for Cancer Registry Data: The Louisiana Experience

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Background

- NAACCR Call for Hispanic Data 2003:

  1995 - 2000

- Before NHIA:

  Louisiana Tumor Registry (**LTR**) Hispanic origin: 862 cases

- After NHIA:

  2400 cases identified as Hispanic (up 178%), 1627 cases (67.8%) determined solely by Spanish surname

Incidence rates* for Hispanic using NHIA: 1995 - 2000

	Hispanic		NH-White		NH-Black	
	M	F	M	F	M	F
LTR	689	471	584	399	668	384
US	443	313	562	435	661	392

* Average annual age-adjusted (US 2000 standard) cancer incidence rates per 100,000 population

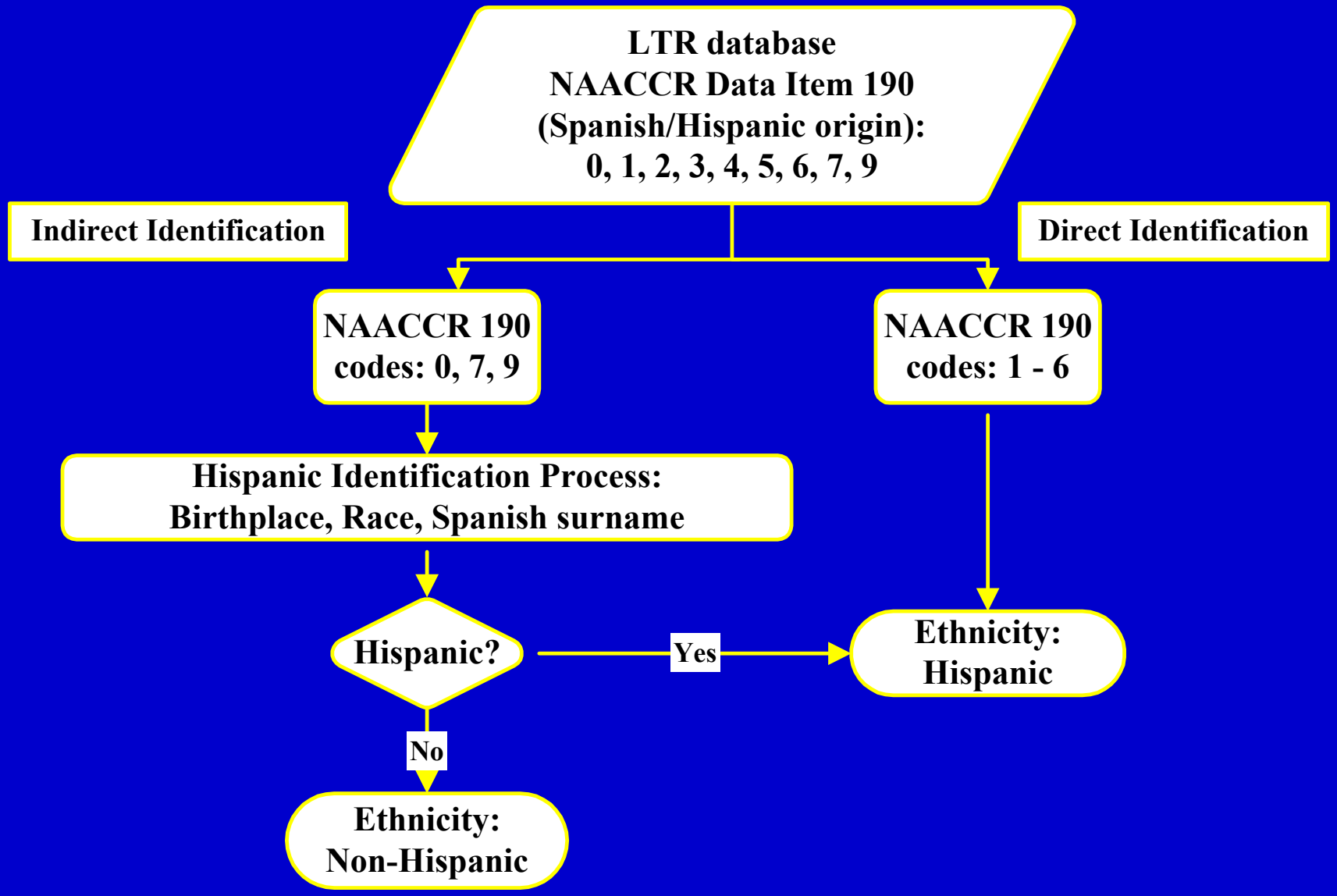
- Rates are not consistent with national figures
- Purpose: Is NHIA a good algorithm for identifying Hispanic ethnicity in Louisiana?

NAACCR data item 190: Spanish/ Hispanic origin

Coding scheme:

0: Non-Spanish; non-Hispanic
1: Mexican
2: Puerto Rican
3: Cuban
4: Central or south American (except Brazil)
5: Other specified Spanish/Hispanic origin
6: Spanish/Hispanic, NOS
7: Spanish surname only
9: Unknown

NHIA Flow Chart



Study Eligibility Criteria

- Cases in LTR diagnosed in 2000-2001
- Determined as "Hispanic" after applying NHIA
  - Include all deceased cases
  - Alive cases included cases that were recorded in LTR as Non-Hispanic (0), Spanish surname only (7) and unknown (9)

Study Methodology

- Phase I: Death certificate
  - Deceased cases (278)
- Phase II: In-depth review of medical record
  - Deceased cases, *in progress*
  - Alive cases (369)
- Phase III: Patient interview
  - Alive patients (ACoS hospitals), *in progress*

Information collected for Phase I and II

- Race
- Spanish/Hispanic ethnicity
- Birthplace
- Maiden name (female only)
- Source for documenting Hispanic ethnicity (Phase II only)

Phase I: Death certificate (DC)

- Compare the agreement of race and Hispanic ethnicity from LTR initial data with DC data
- Examine the completeness of birthplace and maiden name information on LTR initial data, DC data and LTR supplemented with DC data
- Compare the outcome of Hispanic ethnicity derived from NHIA using LTR initial data and LTR supplemented with DC data

Agreement on race classification by LTR and DC

LTR	Death Certificate			
	White	Black	Other	Total
White	246	4	5	255
Black	4	16	0	20
Other	1	0	2	3
Total	251	20	7	278

Agree = 264/278 = 95.0%
Disagree = 14/278 = 5.0%
P-value = 0.4459 (Bowker's test)

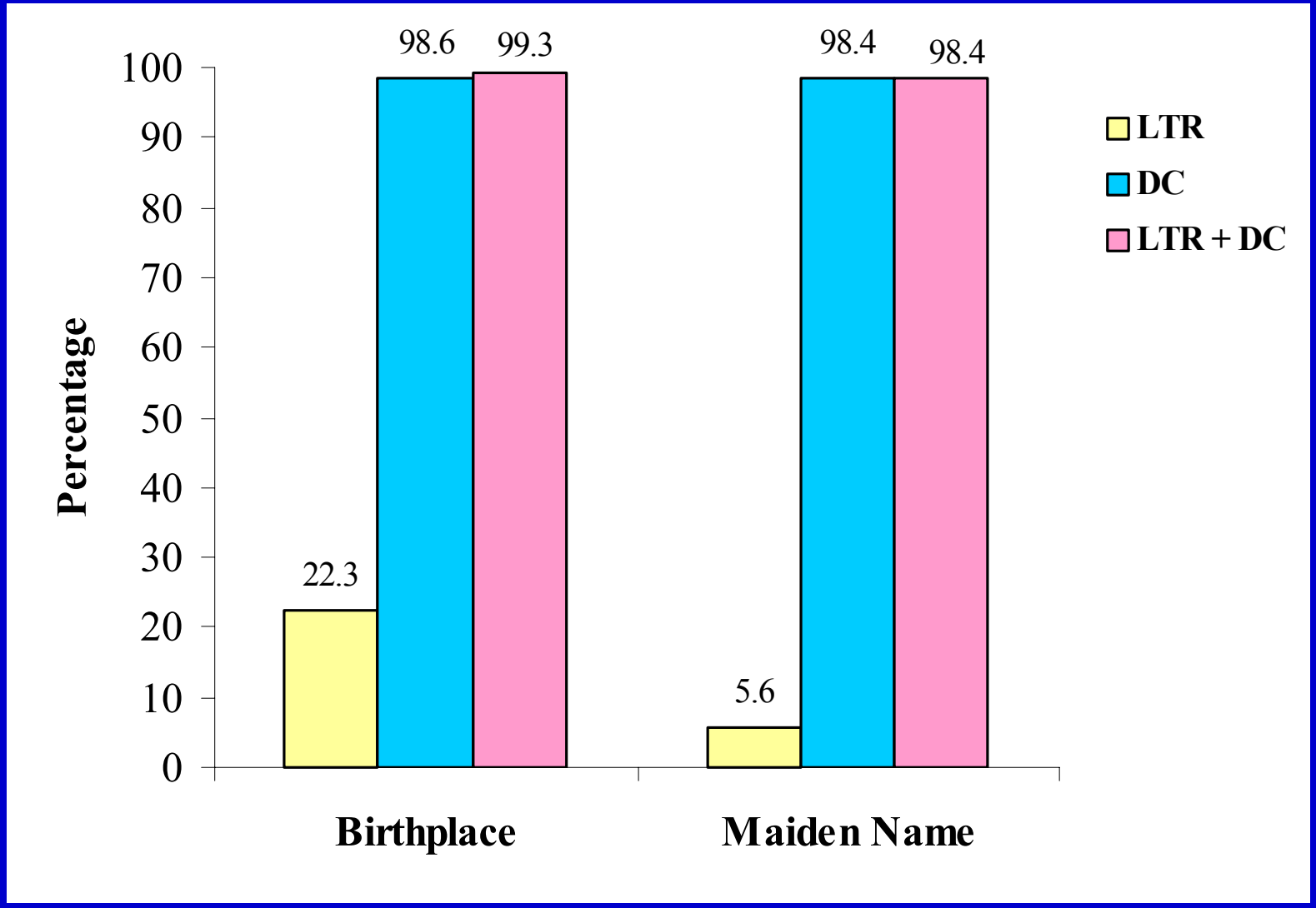
Agreement on ethnicity classification by LTR and DC

LTR	Death Certificate		
	Non-Hispanic	Hispanic	Total
Non-Hispanic*	150	26	181
Hispanic	58	44	97
Total	208	70	278

Agree = 194/278 = 69.8%
Disagree = 84/278 = 30.2%
P-value = 0.0002 (McNemar's test)

* Includes non-Hispanic and unknown

Completeness of birthplace and maiden name on LTR, DC and LTR supplemented with DC data



NHIA on LTR data vs. on LTR supplemented with DC: Males and Females

	Non-Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR Data	166	59.7	97	34.9	7	2.5	8	2.9	278
NHIA on LTR data	0	0.0	100	36.0	178	64.0	0	0.0	278
NHIA on LTR+DC**	72	25.9	128	46.0	78	28.1	0	0.0	278

*NAACCR data item 190 values 1 – 6
** Hispanic ethnicity, Birthplace, maiden name

NHIA on LTR data vs. on LTR supplemented with DC: Males

	Non-Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR Data	82	53.6	65	42.5	3	2.0	3	2.0	153
NHIA on LTR data	0	0.0	68	44.4	85	55.6	0	0.0	153
NHIA on LTR+DC***	2	1.3	80	52.3	71	46.4	0	0.0	153

*NAACCR data item 190 values 1 – 6
** Hispanic ethnicity, Birthplace

NHIA on LTR data vs. on LTR supplemented with DC: Females

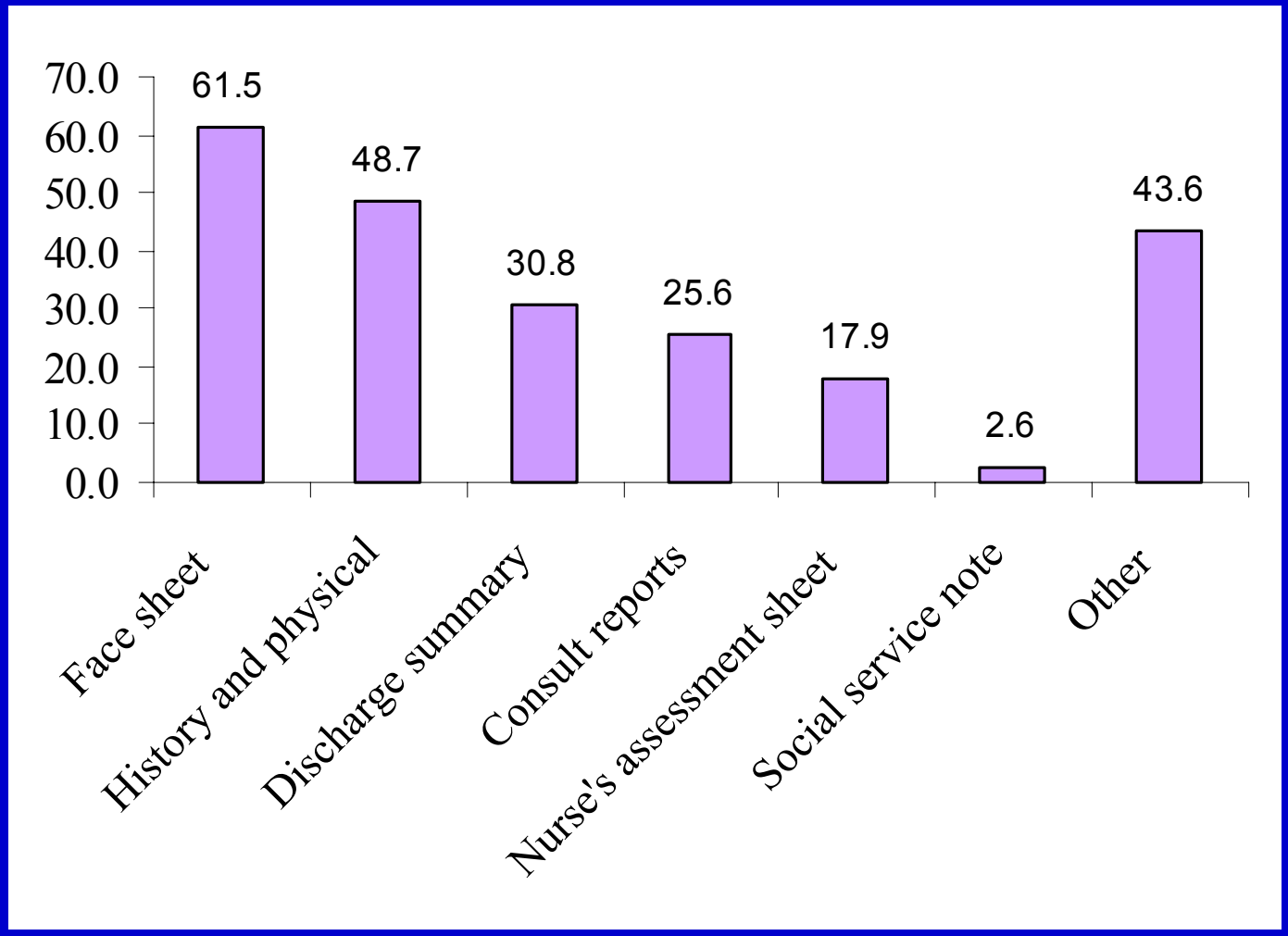
	Non Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR Data	84	67.2	32	25.6	4	3.2	5	4.0	125
NHIA on LTR data	0	0.0	32	25.6	93	74.4	0	0.0	125
NHIA on LTR+DC**	70	56.0	48	38.4	7	5.6	0	0.0	125

*NAACCR data item 190 values 1 – 6
** Hispanic ethnicity, Birthplace, maiden name

Phase II: In-depth review of medical record for alive cases

- **Source documents**
  - Face sheet
  - History and physical examination
  - Discharge summary
  - Consult reports
  - Nurse's assessment sheet
  - Social service note
  - Other
- **39 (10.6%) out of 369 cases were identified as Hispanic**

Relative importance of source documents for verifying Hispanic ethnicity

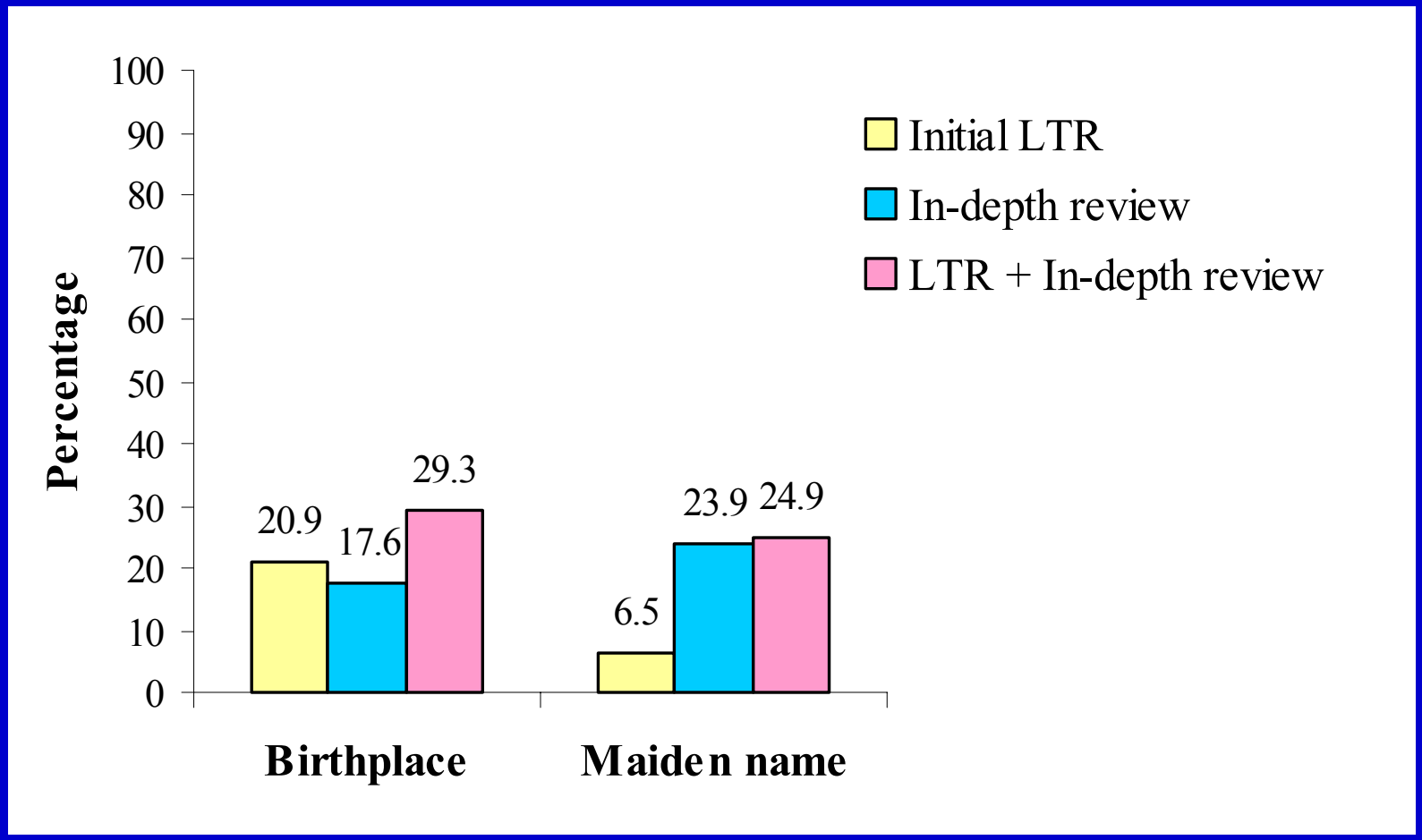


Agreement on race classification by LTR and medical record review

Initial LTR	In-depth review			
	White	Black	Other/Unknown	Total
White	333	0	8	341
Black	2	24	0	26
Other/Unknown	2	0	0	2
Total	337	24	8	369

Agree = 357/369 = 96.7%
Disagree = 12/369 = 3.3%
p-value = 0.1328 (Bowker's Test)

Completeness of birthplace and maiden name on LTR, review medical chart and LTR/review medical chart



NHIA on LTR data vs. on LTR supplemented with in-depth review: Males and Females

	Non-Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR data	338	91.6	0	0.0	23	6.2	8	2.2	369
NHIA on LTR data	0	0.0	9	2.4	360	97.6	0	0.0	369
NHIA on LTR + In-depth review **	23	6.2	42	11.4	304	82.4	0	0.0	369

* NAACCR data item 190 values 1 – 6

** Race, Hispanic, birthplace, maiden name

NHIA on LTR data vs. on LTR supplemented with in-depth review: Males

	Non Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR data	151	89.9	0	0.0	12	7.1	5	3.0	168
NHIA on LTR data	0	0.0	1	0.6	167	99.4	0	0.0	168
NHIA on LTR + In-depth review **	1	0.6	20	11.9	147	87.5	0	0.0	168

* NAACCR data item 190 values 1 – 6
** Race, Hispanic, birthplace

NHIA on LTR data vs. on LTR supplemented with in-depth review: Females

	Non-Hispanic		Specific*		Surname Only		Unknown		Total
	N	%	N	%	N	%	N	%	N
Initial LTR data	187	93.0	0	0.0	11	5.5	3	1.5	201
NHIA on LTR data	0	0.0	8	4.0	193	96.0	0	0.0	201
NHIA on LTR + In-depth review **	22	10.9	22	10.9	157	78.1	0	0.0	201

* NAACCR data item 190 values 1 – 6
** Race, Hispanic, birthplace, maiden name

Cancer incidence rates by race/ethnicity using NHIA: 2000 to 2001

	Hispanic		NH-White		NH-Black	
	M	F	M	F	M	F
LTR data	726	473	591	404	672	391
LTR/DC/Review medical chart	721	368	591	407	672	391

- Rates are per 100,000 and adjusted to the 2000 u.s. population standard
- Population estimates: NCI - SEER program

Summary

- Death certificate is a good source to obtain birthplace and maiden name information
- Maiden name is a critical indicator to identify Hispanic ethnicity for females
- Review medical records helped to bring missing Hispanic data
- Information on birthplace and maiden name is not recorded in medical record for the majority of patients
- Race information in LTR is highly consistent with death certificate and medical charts