

# A Demographic Description of the Response of Stage IV Primary Right and Left Sided Colon Malignancies to Therapeutic Intervention within Lehigh Valley Health Network.

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# A Demographic Description of the Response of Stage IV Primary Right and Left Sided Colon Malignancies to Therapeutic Intervention within Lehigh Valley Health Network

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## Background

- Colon cancer has diverse pathology based on embryology
  - Right colon (midgut)
  - Left colon (hindgut)
- Express different tumor markers due to this; KRAS present in 68% of L and linked to survival
  - KRAS reflects EGFR mutation
- Geographic variability in colon cancer due to multiple variables
  - Health disparities
  - Gut microbiome
- Left sided tumors nationally have better outcomes
- Right sided: later, advanced, and more common in women

## Problem Statement

Primary colon tumors are thought to have differential outcomes based on multiple factors including right vs. left sided primary location, the prevalence of which has not yet been verified in the Lehigh Valley with demographic analysis

## Methods

- Comprehensive review of literature and national data
- Database development with strict inclusion criteria applied
- 5 year retrospective chart review (2005-2010)
- Descriptive statistics generated
  - Categorical (counts/percentages)
  - Continuous (means/standard dev)
- Compared LVHN with national data

## Visual Data & Results

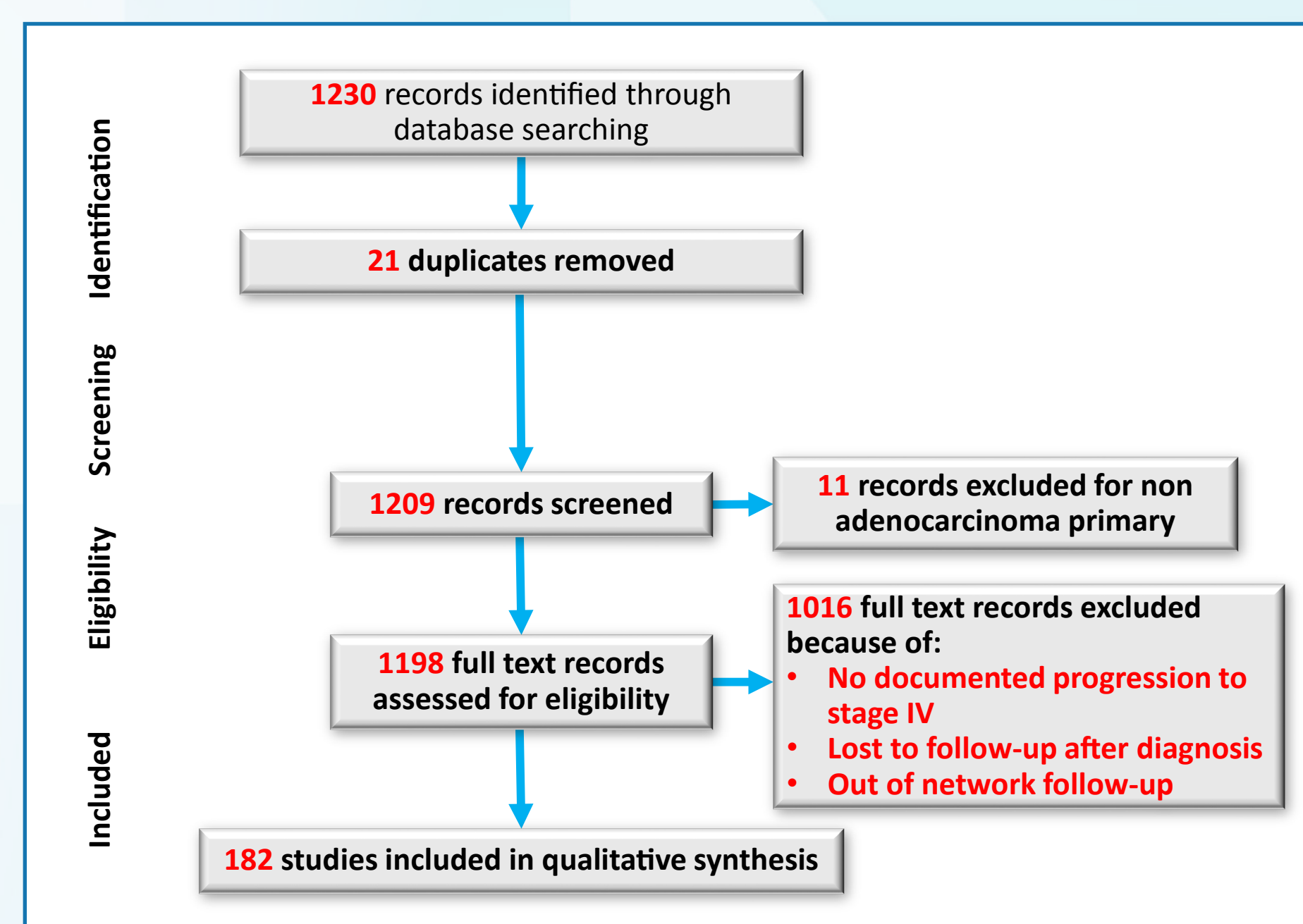


Figure 1: 1230 primary colon malignancies identified from 2005-2015 with subsequent inclusion/exclusion criteria applied.

Table 1. Stage IV Patient Baseline Characteristics		ECOG Performance	
Variable	Total (N=182)	Status (N, %)	
Age (years, mean ± SD)	65.2 ± 14.1	0	68 (37)
<b>Sex (N, %)</b>		1	59 (32)
Male	88 (48)	2	13 (7)
Female	96 (52)	3	4 (2)
<b>Race (N, %)</b>		4	3 (2)
Caucasian	165	Undocumented	35 (19)
Black	(90)	<b>Primary Tumor Size</b>	
Asian/Islander	2 (1)	Right colon	101 (55)
Other/Unknown	2 (1)	Left colon	71 (39)
	13/7	Overlapping/Other	10 (6)
<b>Family History (N, %)</b>		<b>KRAS Mutation (N, %)</b>	40 (22)
CRC Cancer history	29 (16)	<b>Metastatic Data (N, %)</b>	
Non-CRC History	45 (25)	Synchronous	122 (67)
No Fam Cancer Hx	85 (47)	Metachronous	50 (27)
Unknown	23 (12)	Unknown/Unavailable	10 (6)
<b>Personal Cancer Hx (N, %)</b>		<b># of Metastases (mean ± SD)</b>	1.5 ± 0.92
Yes	29 (16)		
No	153 (84)		

Figure 2. Overall and Progression Free Survival Stratified by Right and Left Colon (Median, IQR)

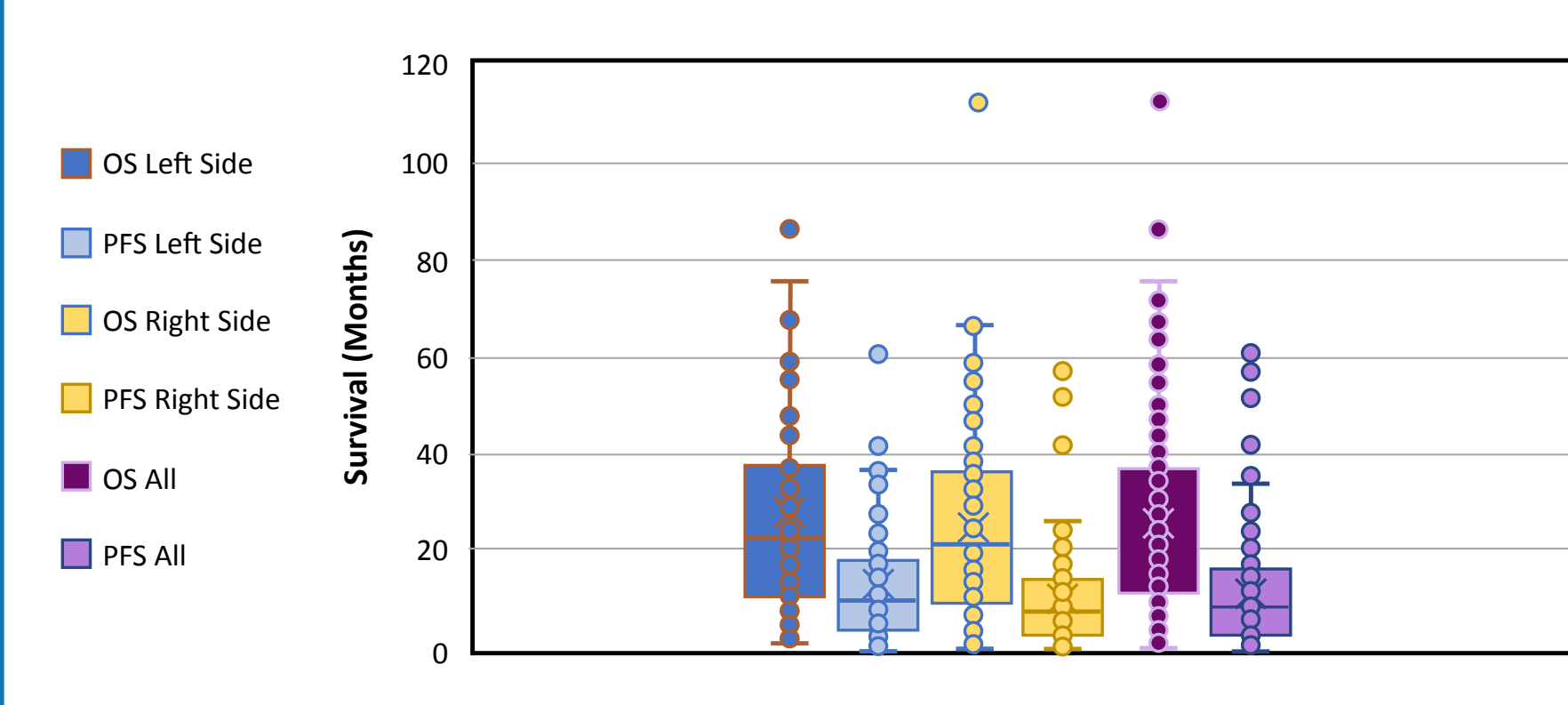


Figure 2: Overall and progression free survival compared by right and left side for all colon malignancies as well as stage IV showing that R sided malignancies have better outcomes.

Figure 3. Tumor Classification by Specific Location in Colon in All Patients vs Stage IV Patients

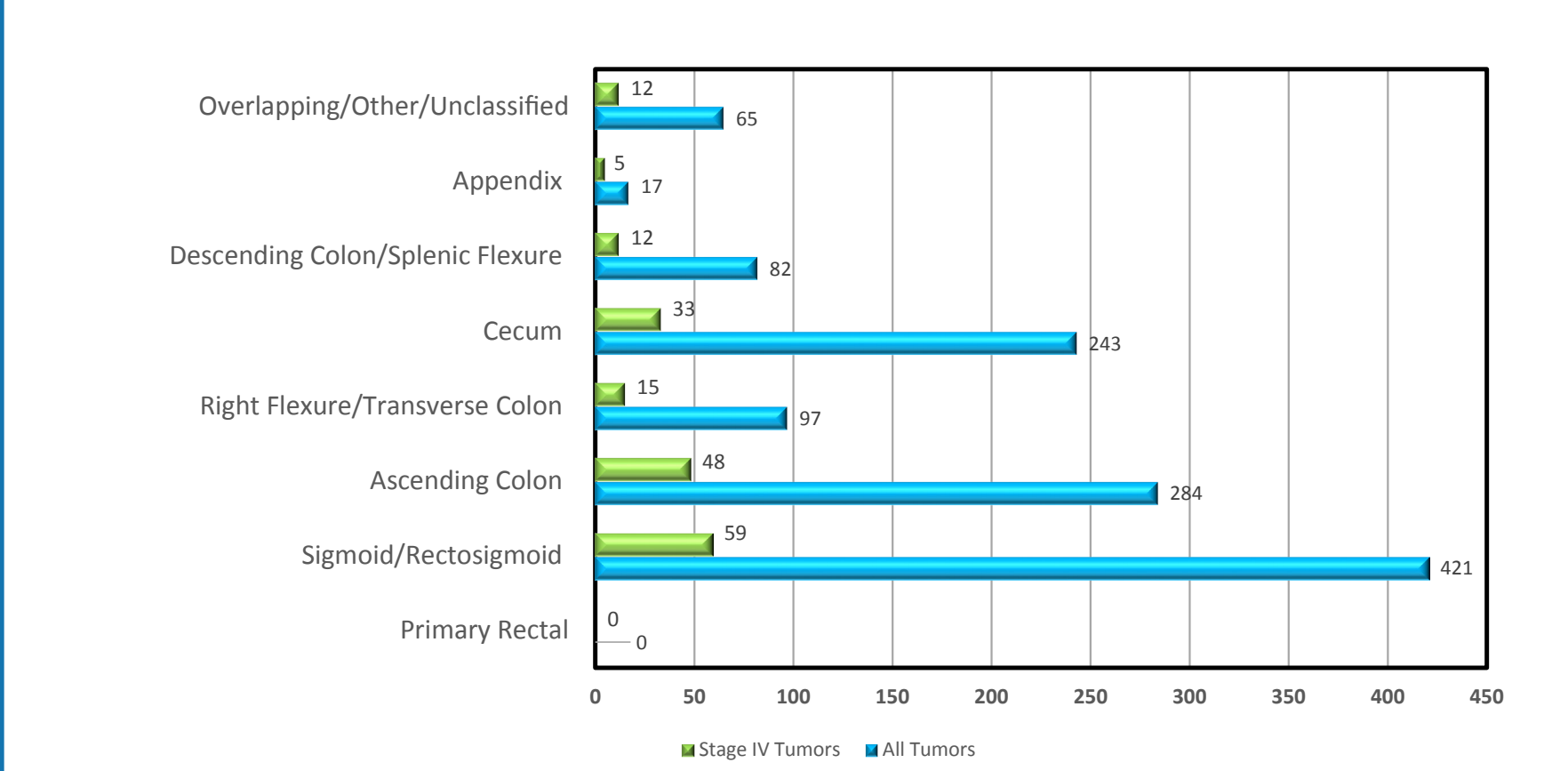


Figure 3: Tumor classification based on location demonstrating that stage IV population is similar to entire population of colon malignancies proportionally.

## Discussion

- Within the Lehigh Valley, 52% of all primary colon malignancies are R sided
  - Nationally, 67%
  - Known screening and microbiome variability possibly implicated
  - Hypothesis driven studies needed
- 59% Stage IV right sided
  - Less national Stage IV data
- Study Limitations:** Lack of follow-up, did not analyze based on chemo, regimens changed since 2010
- SELECT:** Values based patient centered care can be integrated with demographics in shared decision making

## Conclusions

- At LVHN and nationally there is a higher prevalence of R-sided primary colonic malignancies
  - However, to a lesser degree
- Right side=poorer outcome
- Real-time data needed
- Value added to patient care (shared decision making) with presentation of local demographic/survival data

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