



Clinical Utility in Cancer Patient Management

National Cancer Policy Forum Workshop
Oct 29-30, 2018

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Intermountain Healthcare*

Disclosure Information

I have the following financial relationships to disclose:

Advisor: Navican, Ciitizen, Roche

Consulting: Genentech

Stockholder: TOMA Biosciences

Employee of: Intermountain Healthcare

- *and* -

I will not discuss off label use of specific drugs and/or investigational use in my presentation.

Intermountain Healthcare: An Integrated System

22

Hospitals

180

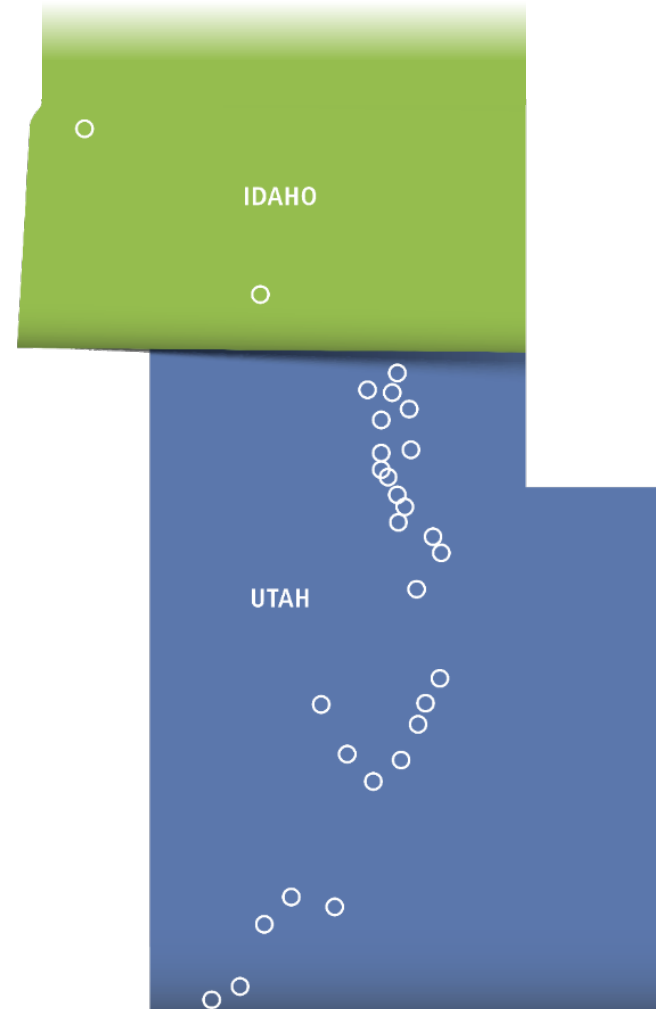
Medical Group
Clinics

2,800

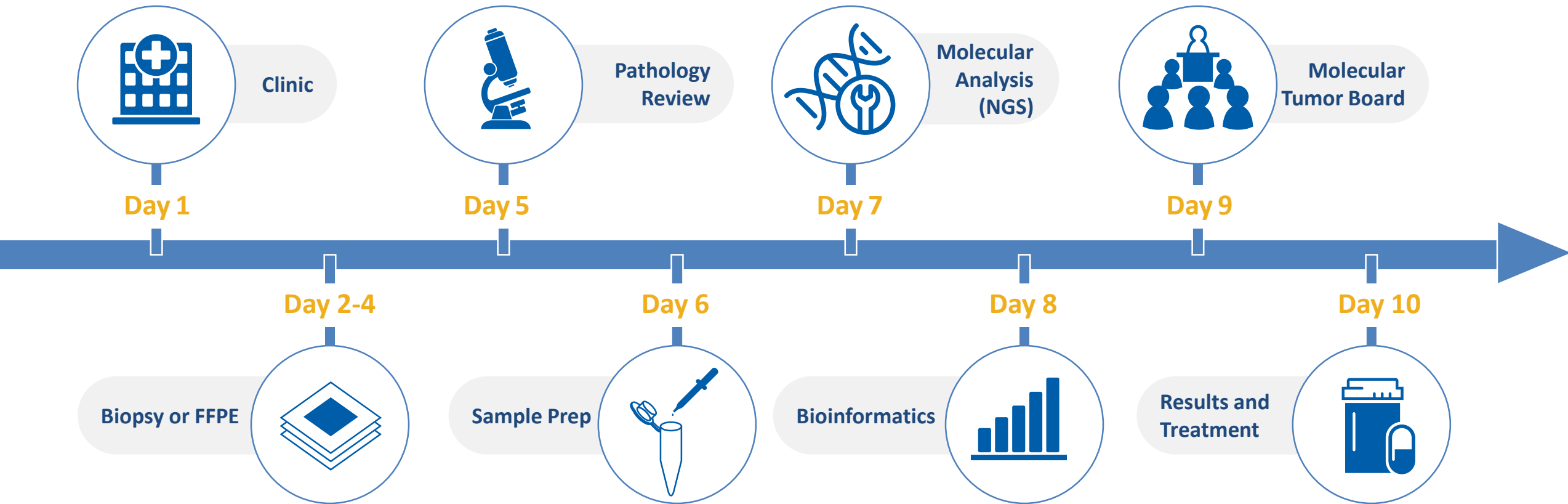
Licensed Beds

875,000

SelectHealth
Members



Precision Oncology Workflow



MTB Interpretation included on the report

TUMOR BOARD REVIEW FOR IMH-244 Hold and Save Complete

Last Action: 2014-11-14 10:56:55 / Workflow: ICG Tumor Panel for TRF-171 / Step record: IMH-244 / Edit note

☒ Preview Report ☐ View & Edit Details

PATIENT
Name
John M. Doe
Patient DOB
1965-01-01
Gender
Male

SPECIMEN INFORMATION
Surgical Procedure Date
11/03/2014
Date Received
11/14/2014
Specimen Source
bladder
Clinical Diagnosis
Bladder Cancer

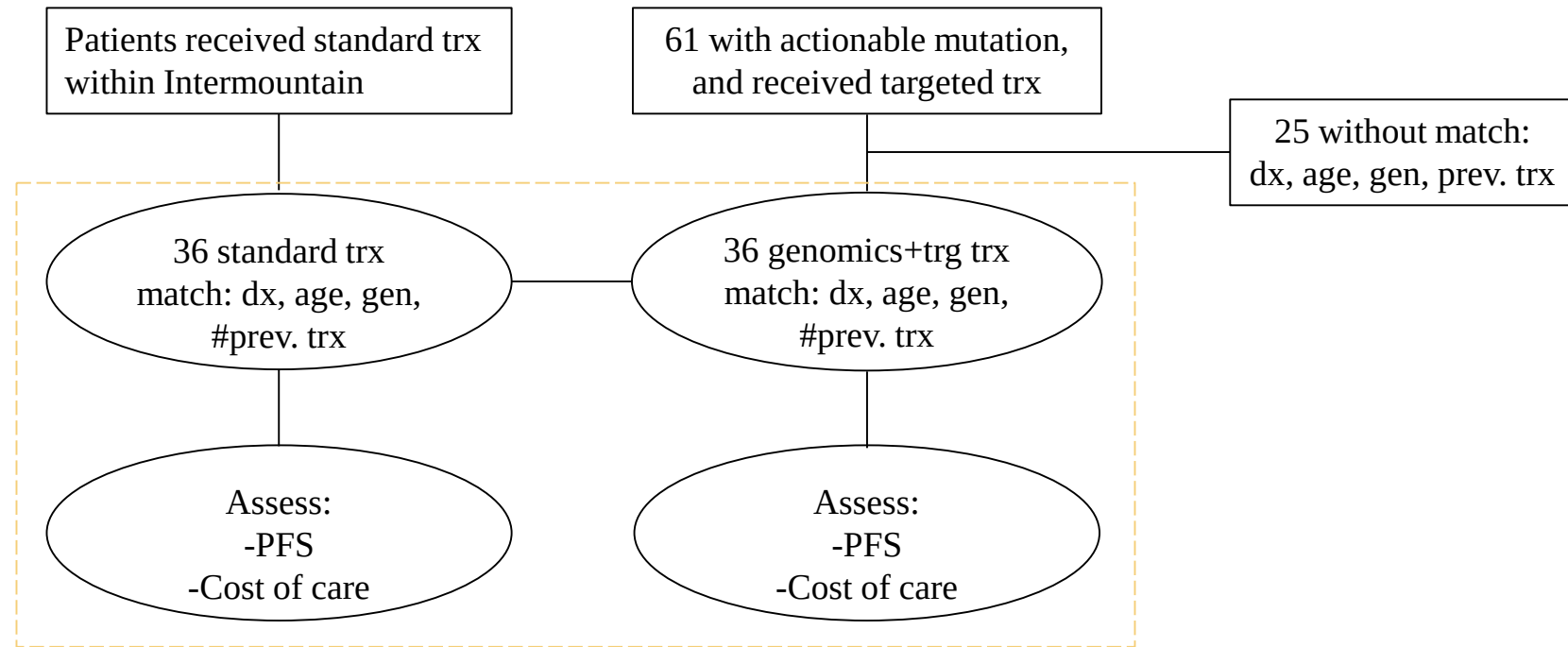
PHYSICIAN INFORMATION
Ordering Physician
John Dolittle
Ordering Physician Phone
(555)555-5555
Pathology Lab
Path Lab Inc.
Pathology Phone
(555)555-5555

MOLECULAR TUMOR BOARD INTERPRETATION
Edit
Based on the genomic profile of your patient's tumor, the Molecular Tumor Board's interpretation suggests the following potential therapeutic interventions in the ranked list below*

GENE	RANKED LIST OF AGENTS	
EGFR	Afatinib	Order
	Erlotinib	Order

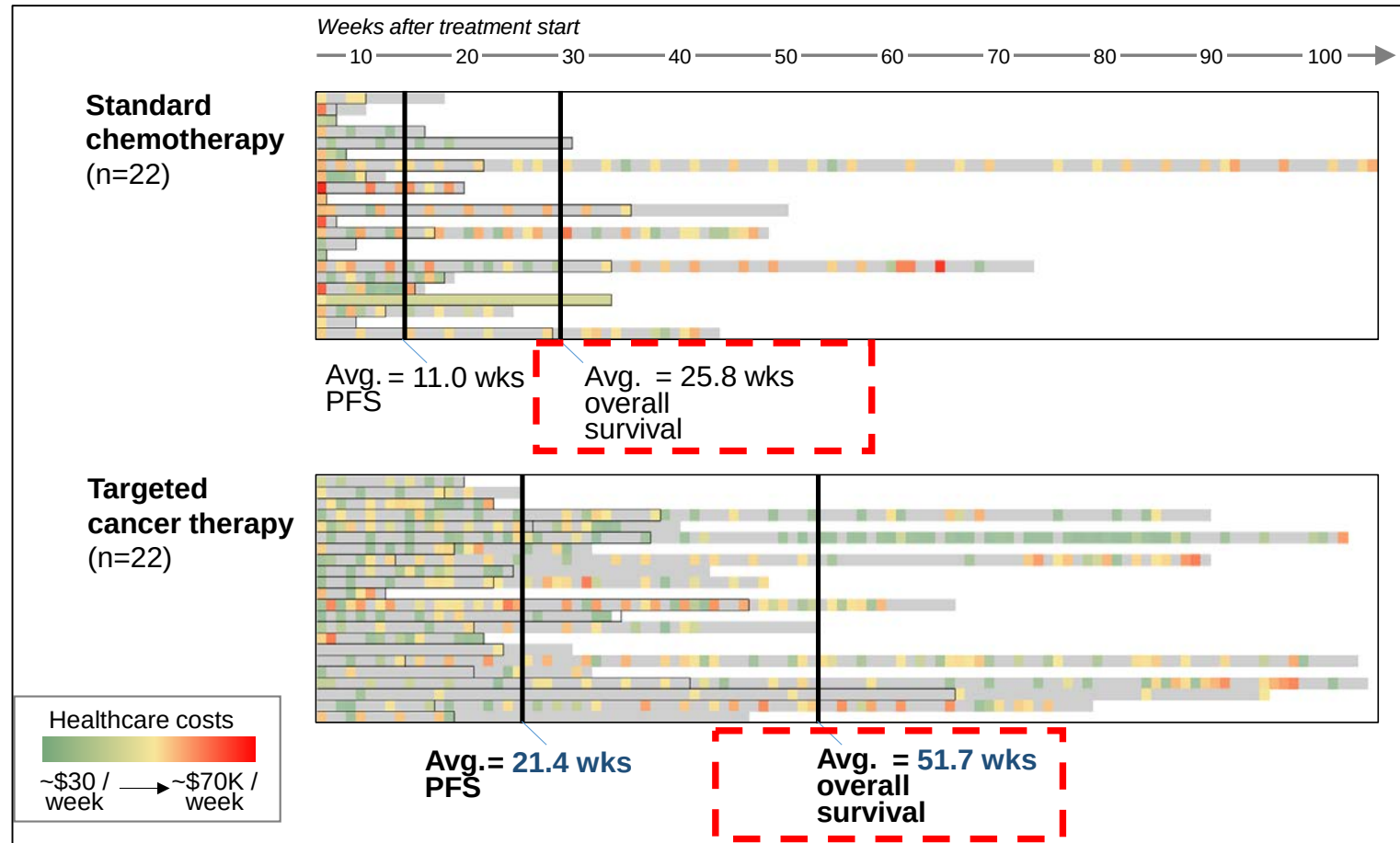
Interp. in the report

Intermountain Precision Medicine Cohort Study



Haslem and Nadauld. JOP. 2016

Precision Oncology: Overall Survival

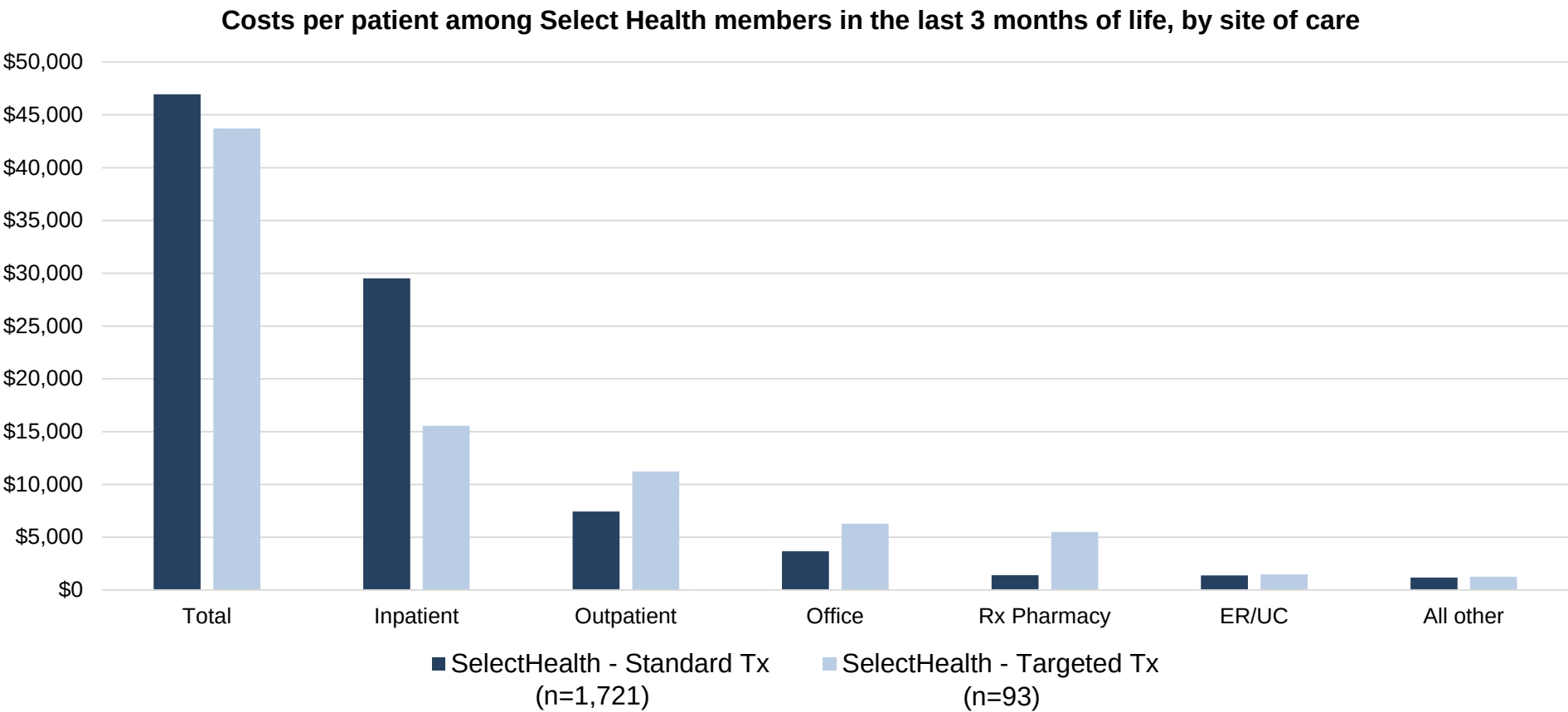


Precision Oncology Costs

	Control (N=22)	Targeted (N=22)	Difference
Inpatient	\$552	\$448	(\$104)
Outpatient	\$2,376	\$1,167	(\$1,209)
ER	\$34	\$45	\$11
Rx drugs	\$346	\$940	\$594
Hospice	\$146	\$9	(\$137)
Sequencing	\$0	\$112	\$112
Total/week	\$3,453	\$2,720	(\$734)

Haslem et al., Oncotarget. 2018

Precision Oncology Costs



	Total	Inpatient	Outpatient	Office	Rx Pharmacy	ER/UC	All other	
SelectHealth - Standard Tx	\$46,940	\$29,523	\$7,425	\$3,663	\$1,415	\$1,385	\$1,177	
SelectHealth - Targeted Tx	\$43,711	\$15,535	\$11,216	\$6,265	\$5,500	\$1,469	\$1,242	
	-6.9%	-47.4%	51.1%	71.1%	288.7%	6.1%	5.5%	

Genomic Testing now covered by local health plan



MEDICAL POLICY

GENETIC TESTING: MOLECULAR PROFILING FOR DETERMINING THERAPY OF MALIGNANT TUMORS

Commercial Plan Policy

SelectHealth covers multi-marker tumor panels using next generation sequencing in the diagnosis and treatment of cancer as a method to guide the selection of therapeutic agents for malignant tumors in *limited circumstances*.

Patients must meet ALL of the following to be eligible for next-generation sequencing:

1. The member has one of the following clinic circumstances:
 - a. Any advanced stage IV solid tumors;
 - b. All lymphomas;
 - c. Multiple myeloma.
2. Patient has demonstrated progression of disease despite at least 1 lines of FDA approved and NCCN approved standard cancer therapy,
3. Member has performance level as evidence by documentation of ECOG performance status 0-2 or Karnofsky score $\geq 70^*$
4. Advance care planning (ACP) has been completed, and documented, with a trained facilitator (i.e. nurse navigator, licensed clinical social worker) or a palliative care provider, or the treating provider.

Precision Medicine Menu

ICG100™

Cancer Panel

RxMatch™

Pharmacogenomics in Mental Health

HerediGene™

Hereditary Cancer Panel

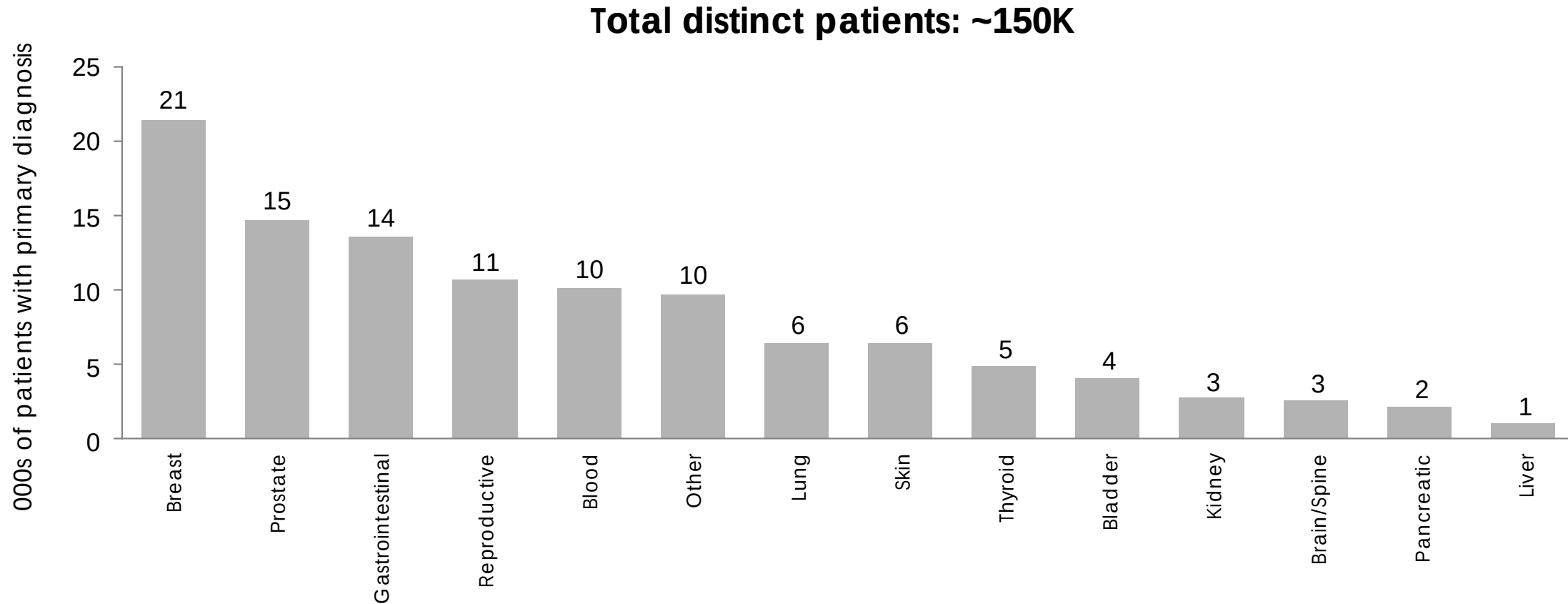
All orderable and reportable within the EMR (Cerner)

Intermountain Biorepository

- 4.5 million archival samples
- Accumulated from 1975-present
- Longitudinal healthcare outcome data (30yrs)



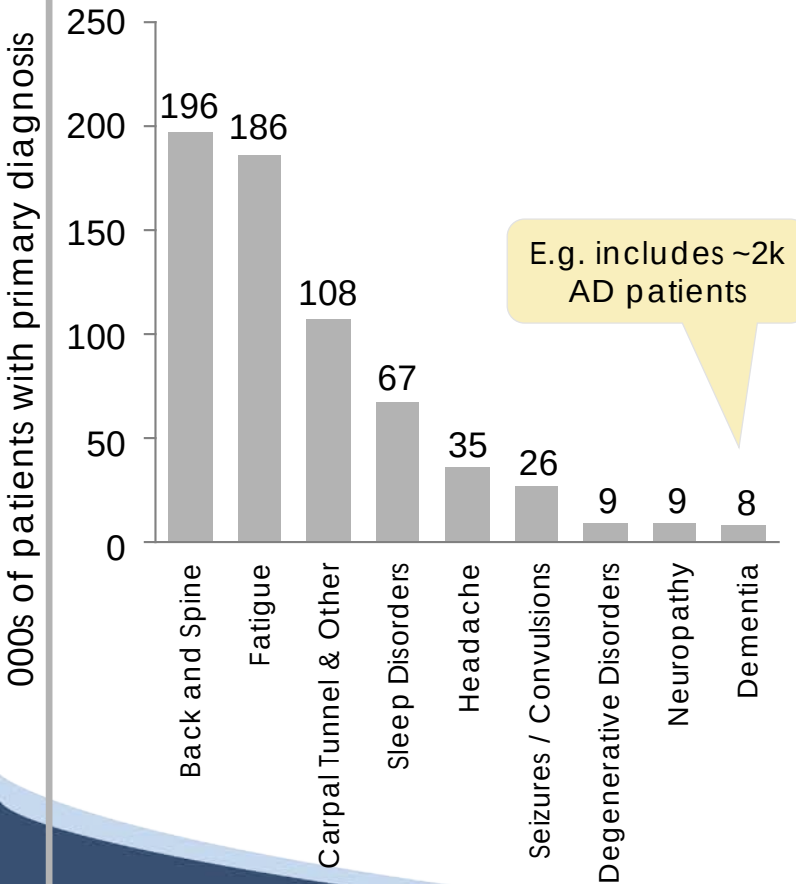
Intermountain biorepository: Oncology



Intermountain biorepository: CNS, Immunology & CVD

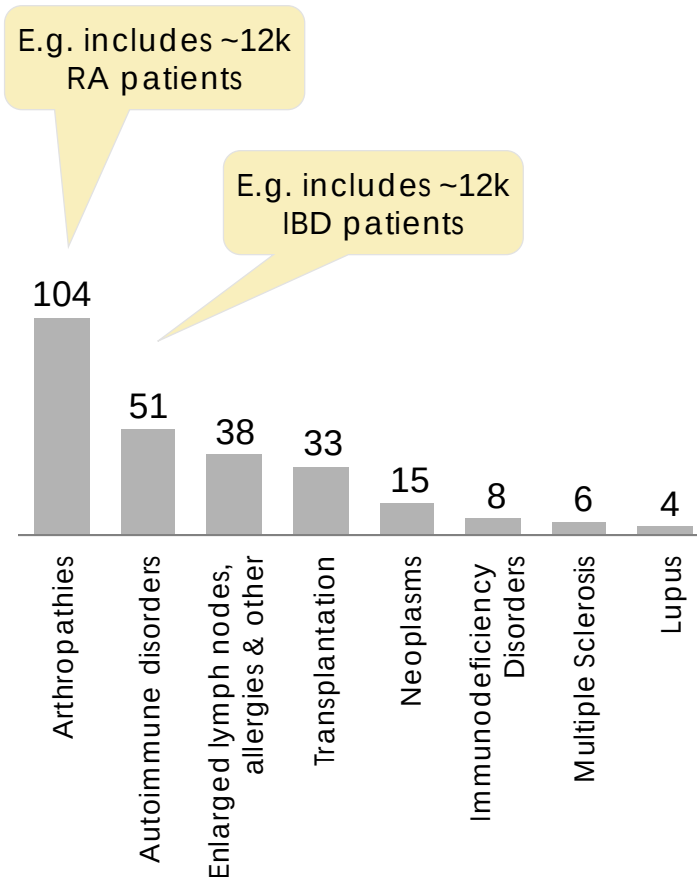
CNS

Total distinct patients: ~500K



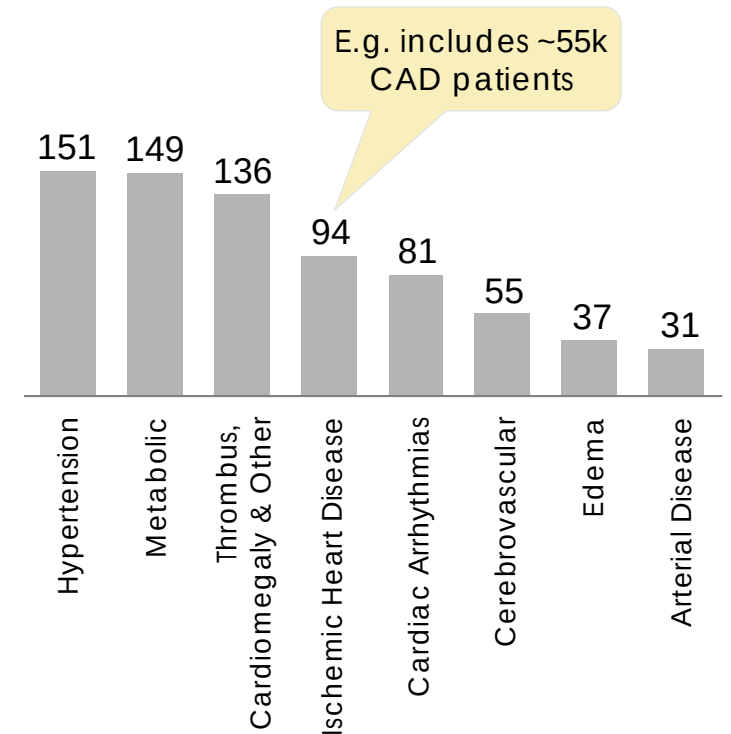
Immunology

Total distinct patients: ~200K



CVD

Total distinct patients: ~400K



NGSOne: *Whole Genome Product + Impact*

- Whole Genome, Whole Exome Sequencing, Whole Transcriptome
- New external collaborations
- NICU sequencing
- Precision Nephrology
- Biorepository (4.3M archival samples)



Acknowledgements

- Intermountain Precision Genomics:
 - Derrick Haslem
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 - David Loughmiller
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 - Robin Romero
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- Stanford University
 - Jim Ford
 - Hanlee Ji
- NCI
- AACR
- ASCO

