4th HEPATITIS C TECHNICAL ADVISORY GROUP

TAG Meeting

HCV-ATTRIBUTABLE HEPATOCELLULAR CARCINOMA AMONG PERSONS WITH HEPATOBILIARY CANCER DIAGNOSES IN GEORGIA: 2015-2016

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Hepatocellular Carcinoma (HCC)

- **Globally, about 20-25% of primary liver cancers are attributable to HCV**
- About 80% of primary liver cancers are HCC
- 5th most-frequent cancer in males, 9th in females
- 2nd leading cause of global cancer deaths
- Almost all cases die within 12 months
- >80% of cases occur in low-resource countries

Why is Hepatocellular Carcinoma Under-ascertained in Georgia?

- **Patients frequently present for care only when cancer is very advanced**:
  - Patient is near death - does not matter clinically whether patient has primary liver cancer or metastatic disease.

- **Patient has a liver tumor detected but HCC is not diagnosed**:
  - Limited access to biopsy or advanced radiolographic methods,
  - Limited financial resources for patient and system,
  - Limited physician skill, experience or access to specialist consultation.

- **Patient has HCC diagnosed or suspected but it is not reported**:
  - Limited cancer reporting prior to 2015,
  - Case not reported to cancer registry,
  - Case reported as liver mass source/histology unknown.

TAG Recommendations

8. ***Improve HCV Surveillance***
   - ***8.1.*** Target high-risk subjects including PWIDs, and dialysis patients for case surveillance and /or serologic surveys to identify trends in disease burden, new infections, and response to treatment.
   - ***8.2.*** Create uniform electronic database to include all HCV surveillance data.
   - ***8.3.*** Repeat national seroprevalence study in 2021.
   - ***8.4.*** Evaluate the quality of HCV associated deaths in national registries to determine if the data can be used for baseline mortality assessment, and for periodic monitoring to assess the impact of the Elimination Program on trends in HCV mortality. If deficits in quality are found but are feasible to correct, develop a plan to improve data quality or develop an analysis plan that takes into account the limitations of the data.
   - ***8.5.*** Consider collecting data on hepatocellular carcinoma and cirrhosis and association with HCV infection

Main Objectives

- **Estimate the recent incidence of HCV-attributable hepatocellular carcinoma** (HCC) in Georgia, and the demographic and clinical characteristics of recent (2015-2016) cases of primary liver cancer
- **Assess the impact of limitations** in technological capacity, health care resources and/or clinical practices, on the under-ascertainment of hepatocellular carcinoma among persons with presumptive diagnoses of liver cancer in Georgia
- **Inform strategies** to enhance ongoing surveillance for the burden of HCV-attributable hepatocellular carcinoma through analyses

Methods

1. **Identify cases for the study using Georgia Cancer Registry 2015-2016 (ICD-10-CM C22.0-C22.9)**
2. **Link cases to the following databases using national ID:**
   - **HCV Testing and Treatment (2015-2017)**
   - **National Vital Statistics (mortality data) 2015-2017,**
   - **E-Health (hospital discharge diagnoses) 2015-2016**
3. *Select a subset of Cancer Registry cases for medical chart review limited to:*
   - *4 largest cities*
   - *Facilities with ≥3 cases ICD-10-CM C22.0-C22.9*

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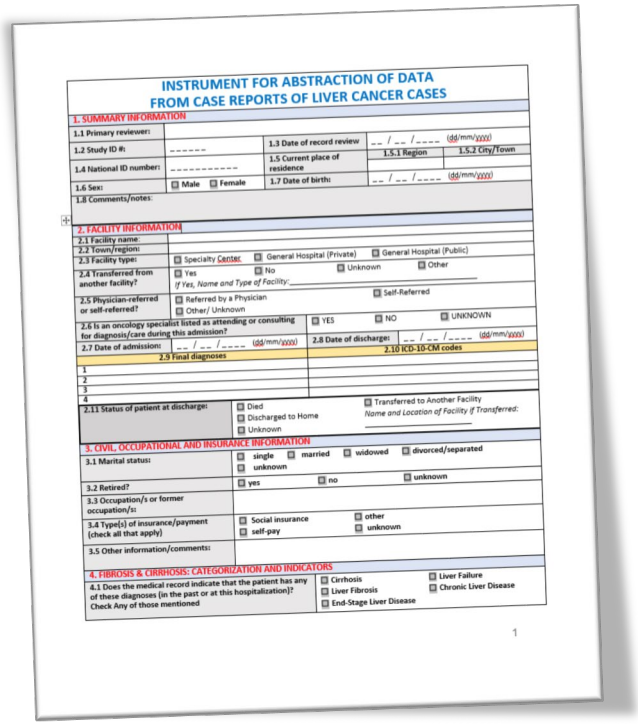
Methods

- Perform a hospital record review of a sample of Cancer Registry cases to:
  - ***Document cancer sub-type and other demographic and clinical information***
  - identify evidence of cirrhosis,

Standard Data Collection Instrument



INSTRUMENT FOR ABSTRACTION OF DATA
FROM CASE REPORTS OF LIVER CANCER CASES

1. SUMMARY INFORMATION

1.1 Primary reviewer:			
1.2 Study ID #:	_ _ _ _ _ _	1.3 Date of record review	__ / __ /____ (dd/mm/yyyy)
1.4 National ID number:	_ _ _ _ _ _ _ _ _ _	1.5 Current place of residence	1.5.1 Region / 1.5.2 City/Town
1.6 Sex:	☐ Male ☐ Female	1.7 Date of birth:	__ / __ /____ (dd/mm/yyyy)
1.8 Comments/notes:			

2. FACILITY INFORMATION

2.1 Facility name:	
2.2 Town/region:	
2.3 Facility type:	☐ Specialty Center ☐ General Hospital (Private) ☐ General Hospital (Public)
2.4 Transferred from another facility?	☐ Yes ☐ No ☐ Unknown ☐ Other *If Yes, Name and Type of Facility:* _____
2.5 Physician-referred or self-referred?	☐ Referred by a Physician ☐ Self-Referred ☐ Other/ Unknown
2.6 Is an oncology specialist listed as attending or consulting for diagnosis/care during this admission?	☐ YES ☐ NO ☐ UNKNOWN
2.7 Date of admission:	__ / __ /____ (dd/mm/yyyy)
2.8 Date of discharge:	__ / __ /____ (dd/mm/yyyy)

2.9 Final diagnoses	2.10 ICD-10-CM codes
1	
2	
3	
4	

2.11 Status of patient at discharge:	☐ Died ☐ Discharged to Home ☐ Unknown ☐ Transferred to Another Facility *Name and Location of Facility if Transferred:*

3. CIVIL, OCCUPATIONAL AND INSURANCE INFORMATION

3.1 Marital status:	☐ single ☐ married ☐ widowed ☐ divorced/separated ☐ unknown
3.2 Retired?	☐ yes ☐ no ☐ unknown
3.3 Occupation/s or former occupation/s:	
3.4 Type(s) of insurance/payment (check all that apply)	☐ Social insurance ☐ other ☐ self-pay ☐ unknown
3.5 Other information/comments:	

4. FIBROSIS & CIRRHOSIS: CATEGORIZATION AND INDICATORS

4.1 Does the medical record indicate that the patient has any of these diagnoses (in the past or at this hospitalization)? Check Any of those mentioned	☐ Cirrhosis ☐ Liver Failure ☐ Liver Fibrosis ☐ Chronic Liver Disease ☐ End-Stage Liver Disease

1

Piloted in 3 facilities in two cities

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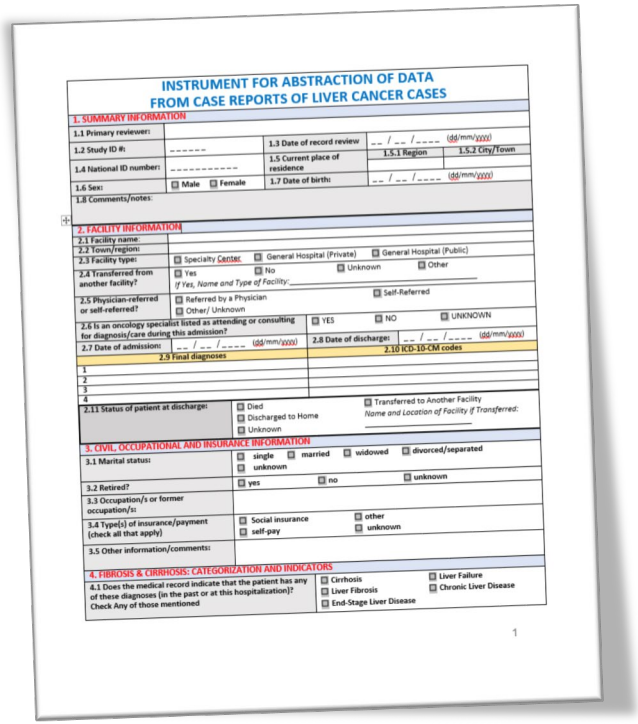

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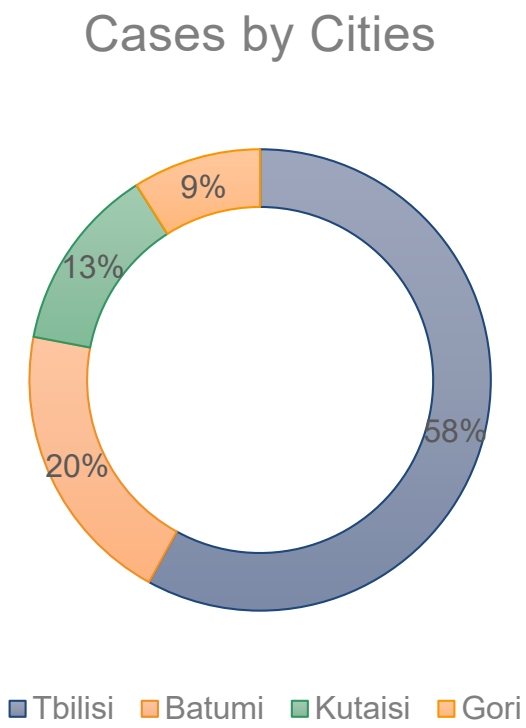
Results:

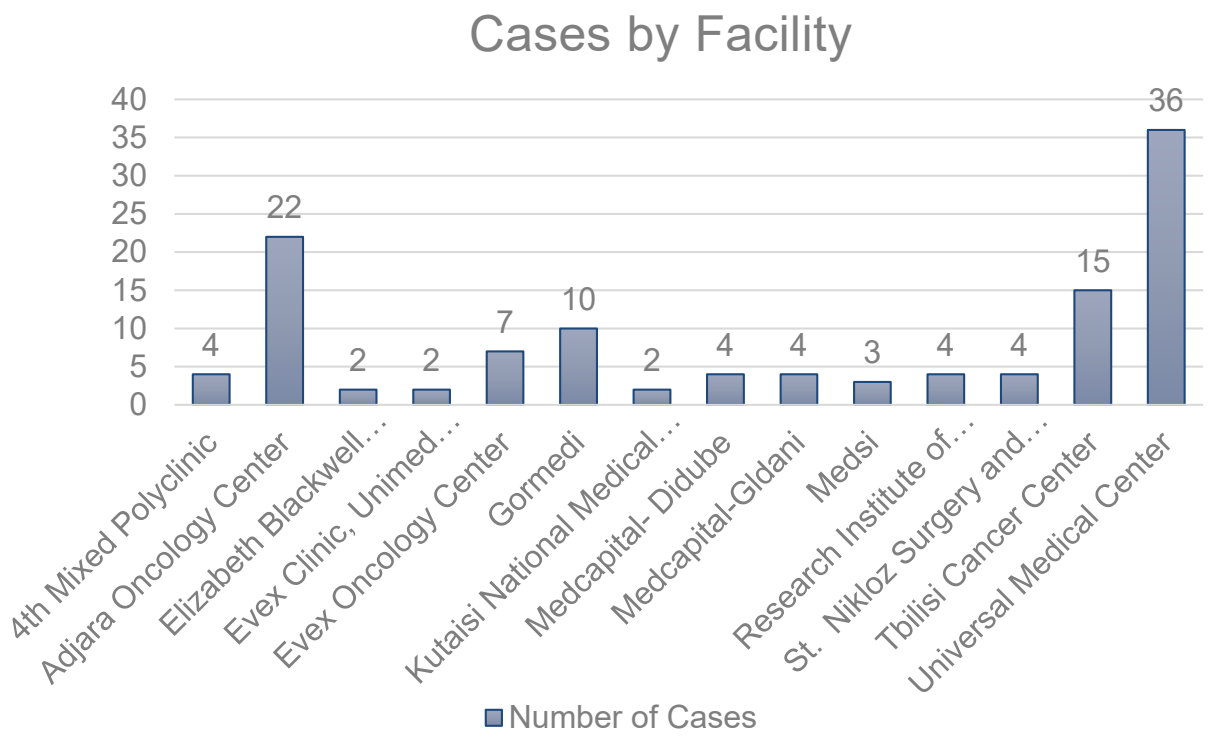
Medical Chart Review

Georgian Cancer Registry (GCR) data 2015-2016

Hepatobiliary cancer cases reported to the GCR in 2015-2016 : 291 cases

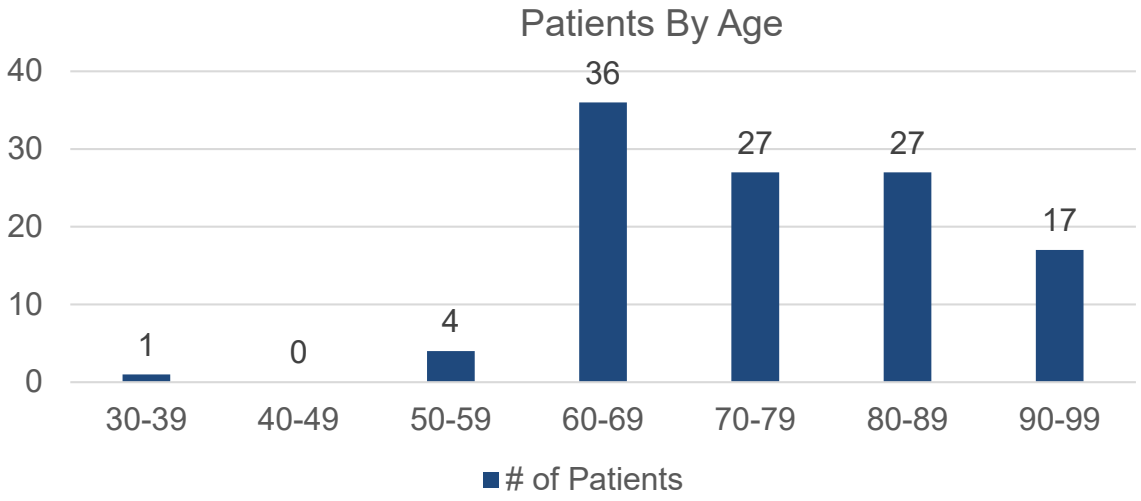
Sample: 119 cases

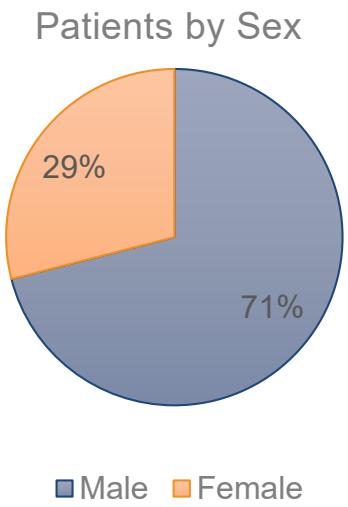


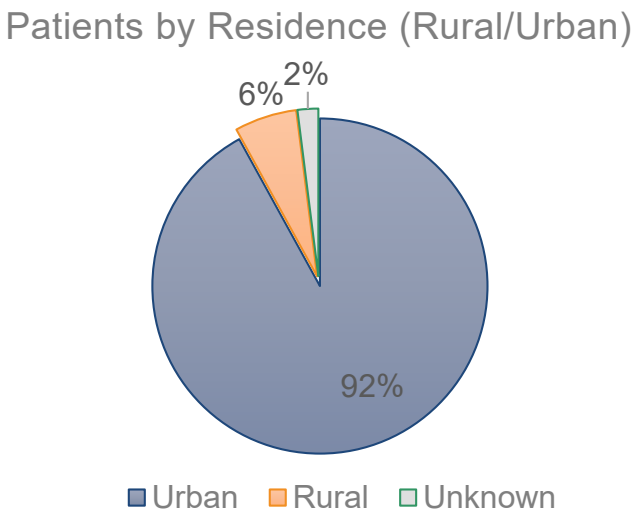


70% of cases - specialty clinics, 30% of cases -general/private hospitals

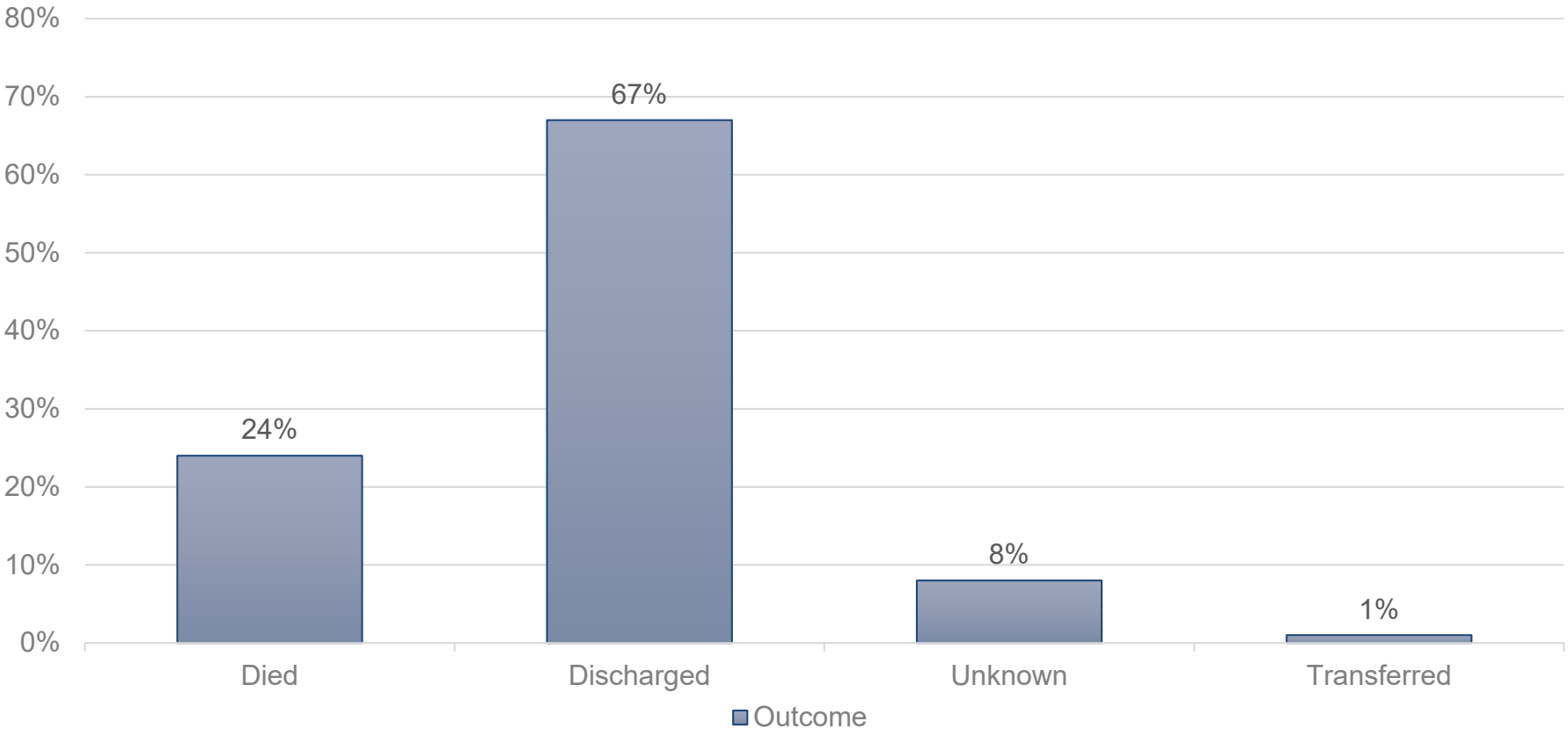
Patient Characteristics



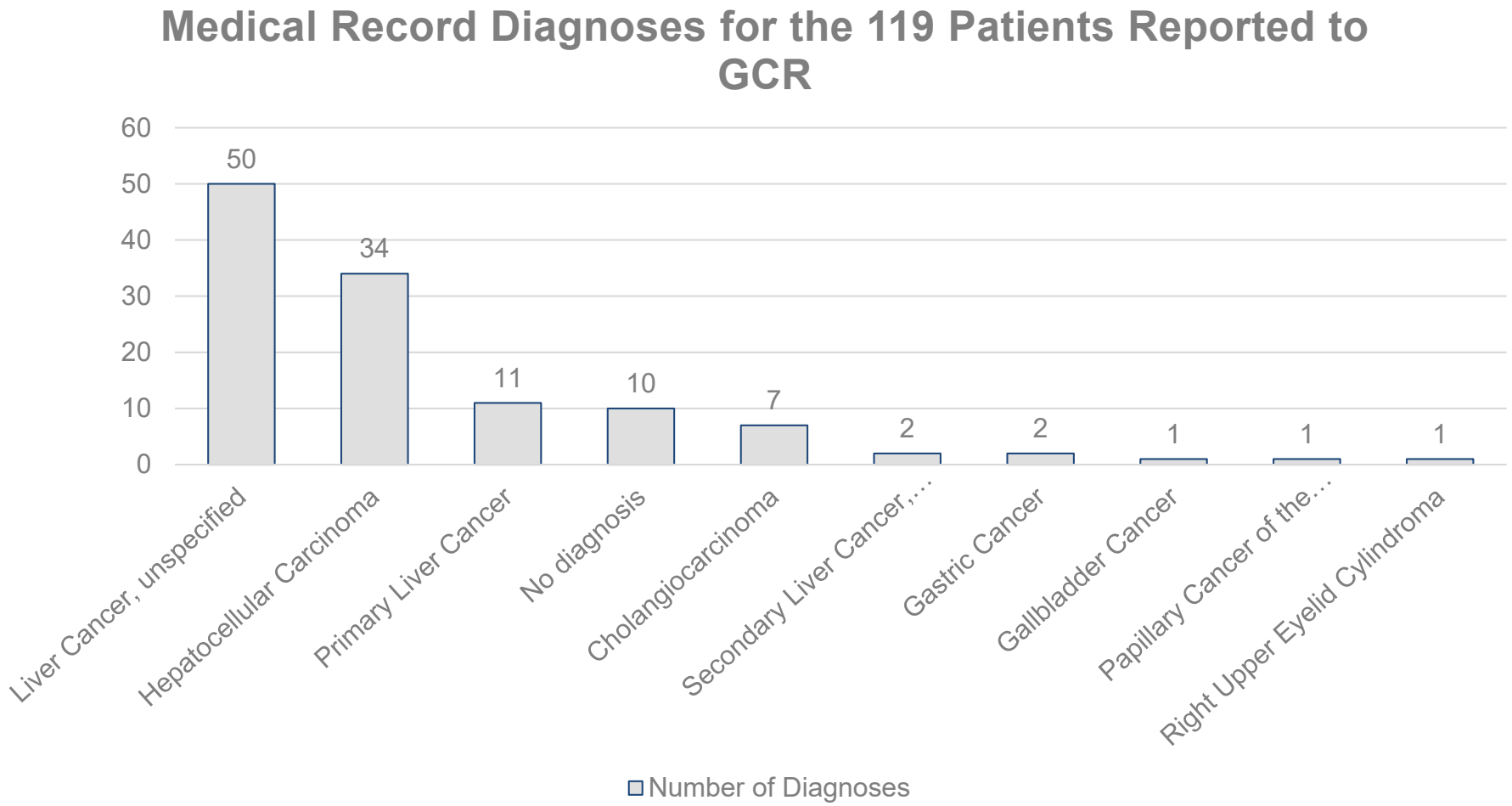




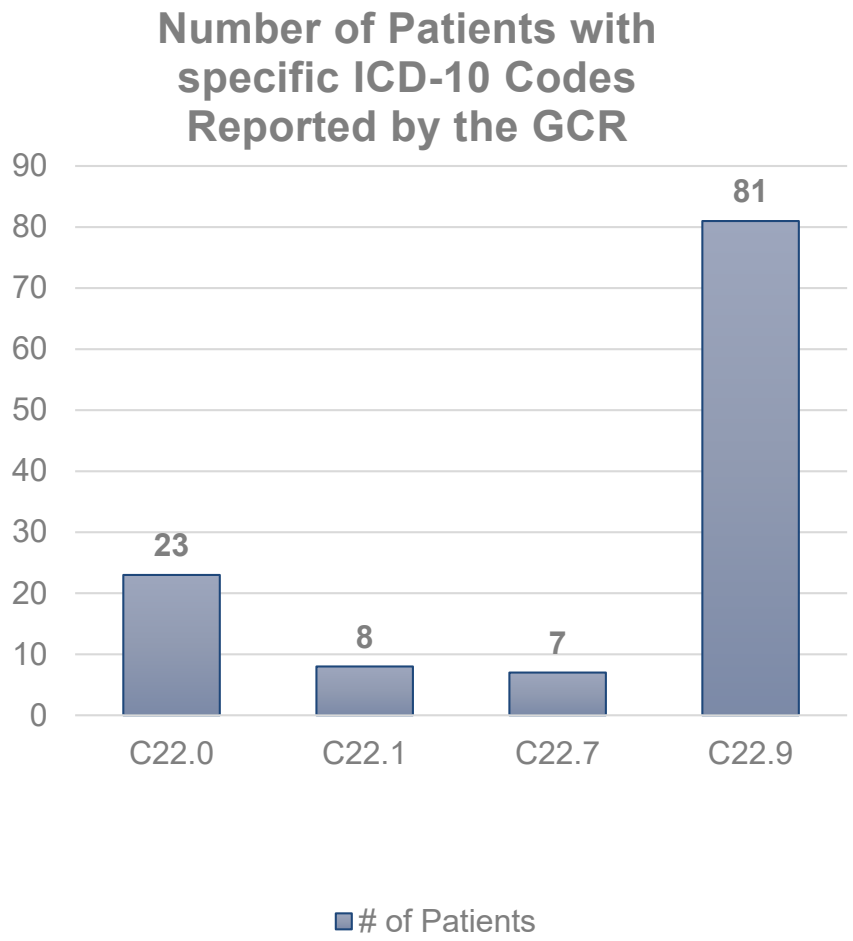
Disposition of Cases from the Facilities

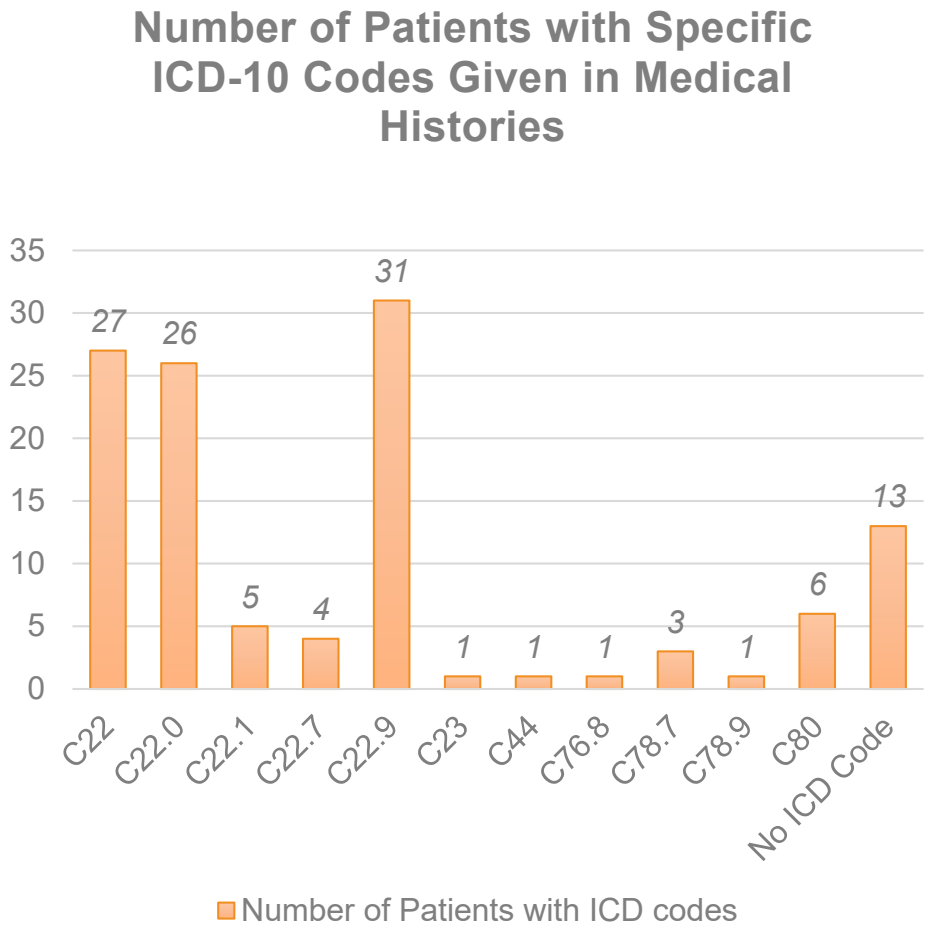


Diagnosis in Medical Records



ICD-10 Codes in the GCR and the Medical Records





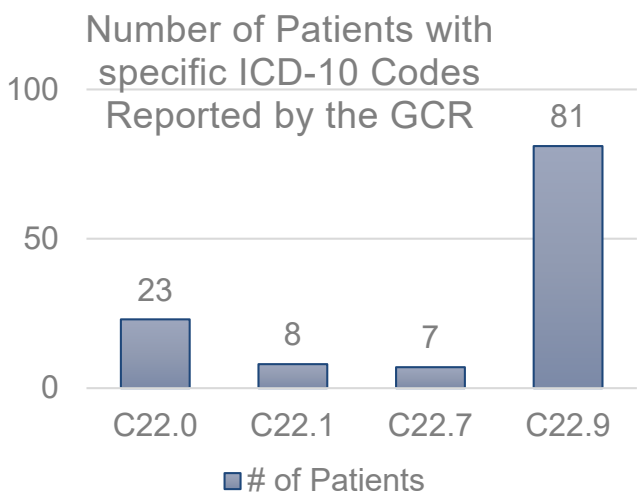
ICD-10 Codes in the GCR and the Medical Records

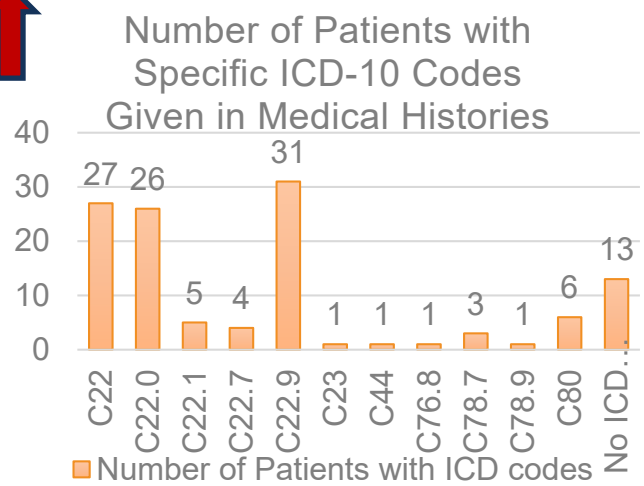
GCR CASE CLASSIFICATIONS

- C22.0 (HCC): *19%*
- *C22.9 (NOS): 68%*
- *All Others: 12%*

MEDICAL RECORD CLASSIFICATIONS

- C22.0 (HCC): *23%:*
- *C22.9 / Not Classified): 60%*
- *All Others: 18%*





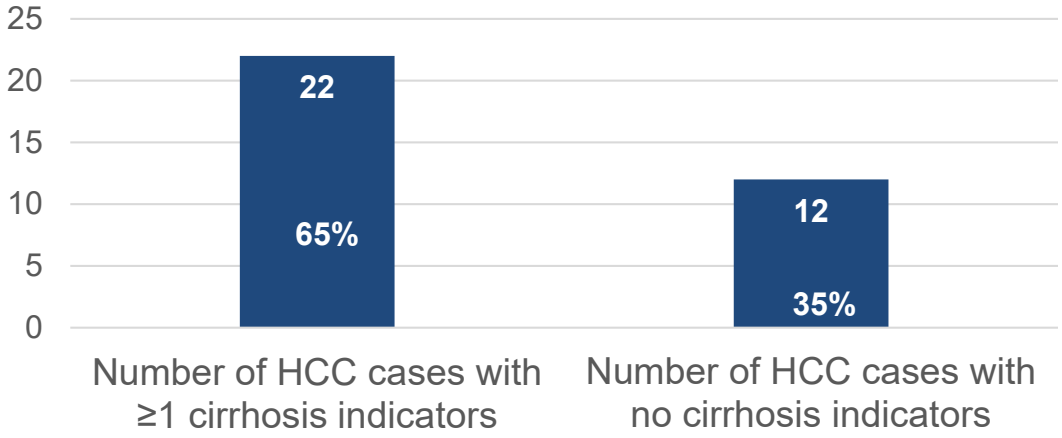
Concordance of ICD-10 Codes Assigned on Medical Record with Those Assigned by GCR

- **48/119 (40%) of diagnostic codes reported in medical records were reassigned by Cancer Registry Coders.**

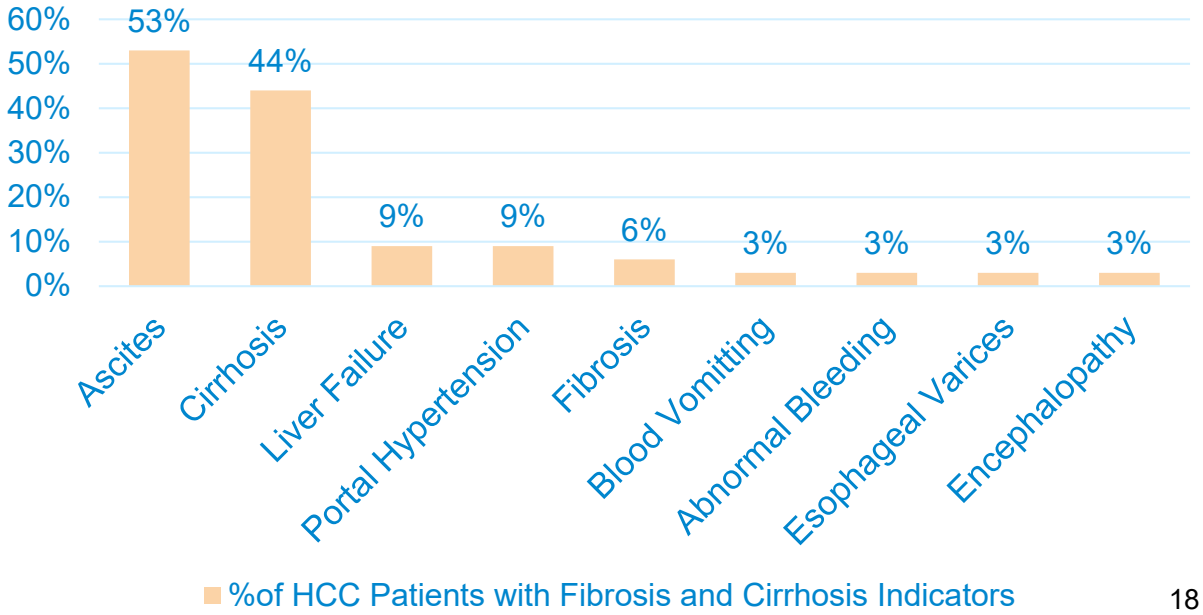
- **Registry Coders use international *WHO/IARC* standards to assign codes – based on data present in the records.**

- **<u>Key Issue</u>: With limited clinical data available, identifying the specific liver cancer types is very challenging. Even with recoding, most cases remained in the *NOS* category (i.e., cancer sub-type and origin of the tumors – primary vs metastatic from another organ – could not be clearly-identified).**

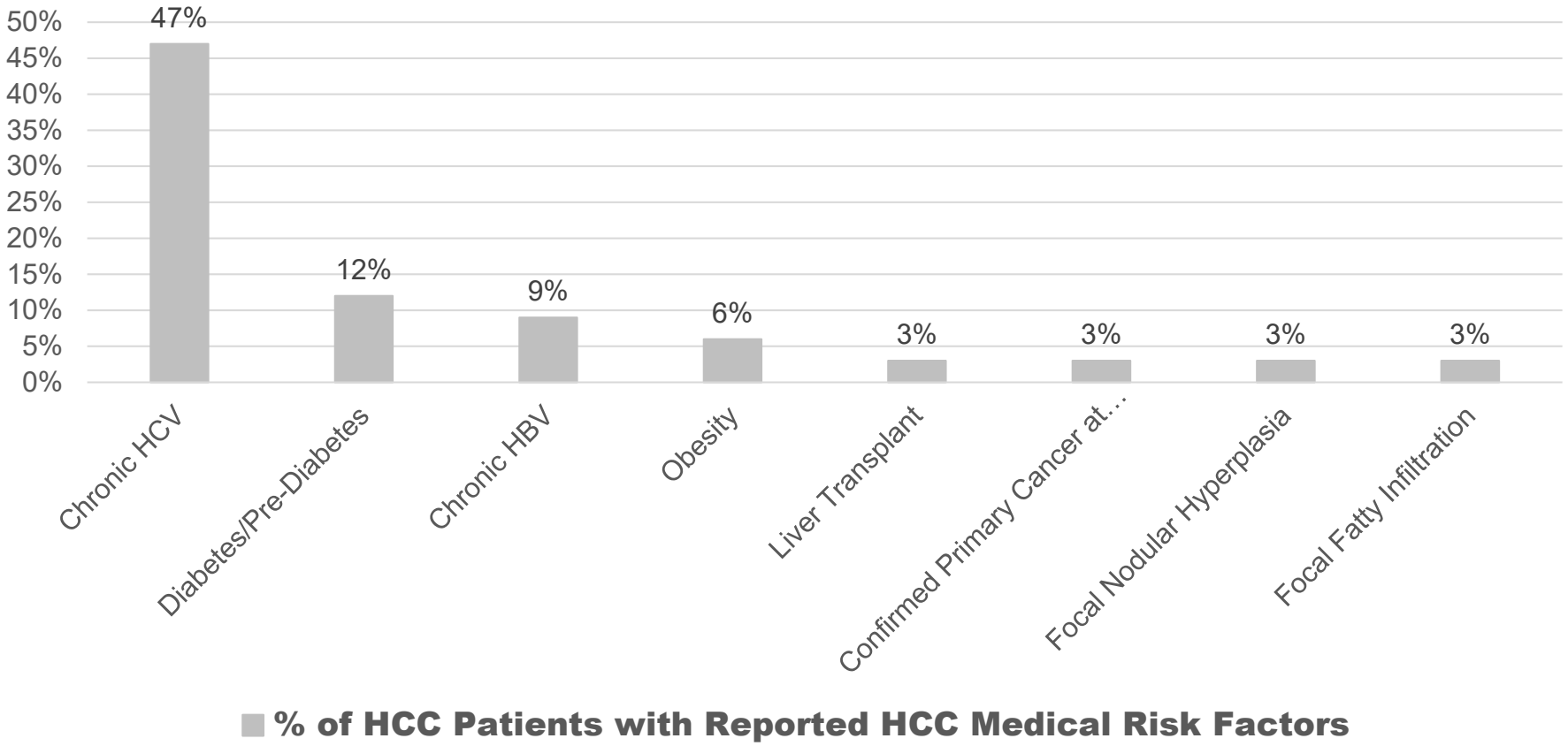
HCC (C22.0) Cases by Fibrosis and Cirrhosis Indicators (34 cases)



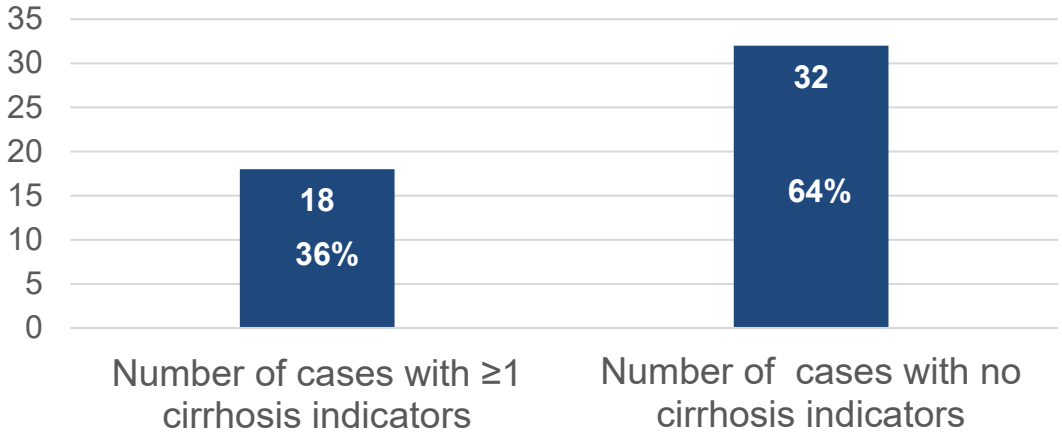
- 1 case of decompensated cirrhosis
- Fibrosis stages not described in any of the cases
- CTP class documented in 3 Cases - Class A-1 ; Class B-2



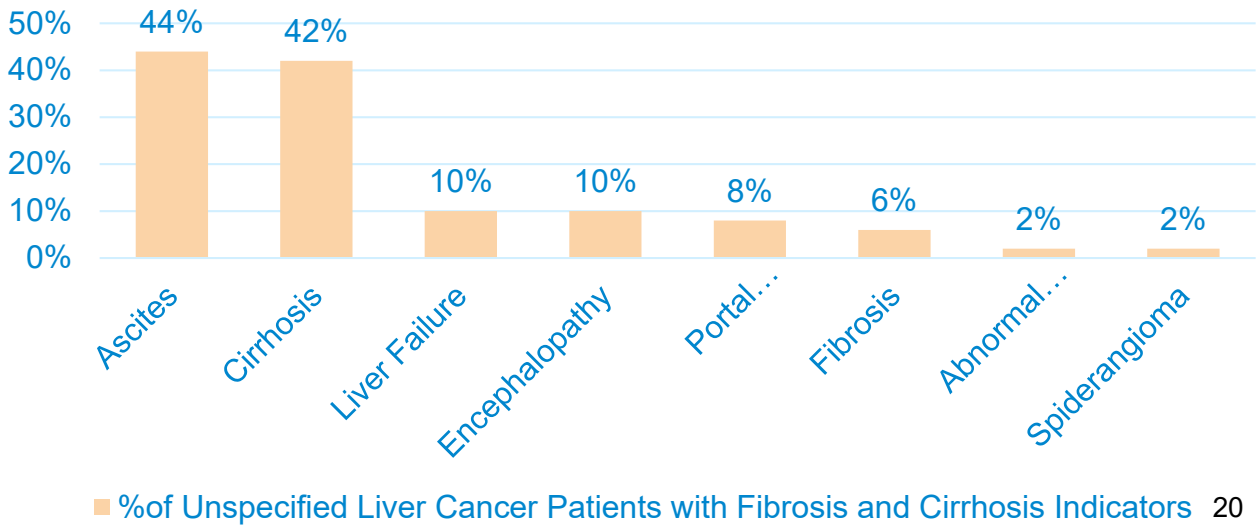
34 HCC Cases by HCC Medical Risk Factors and Clinical Indicators for HCC



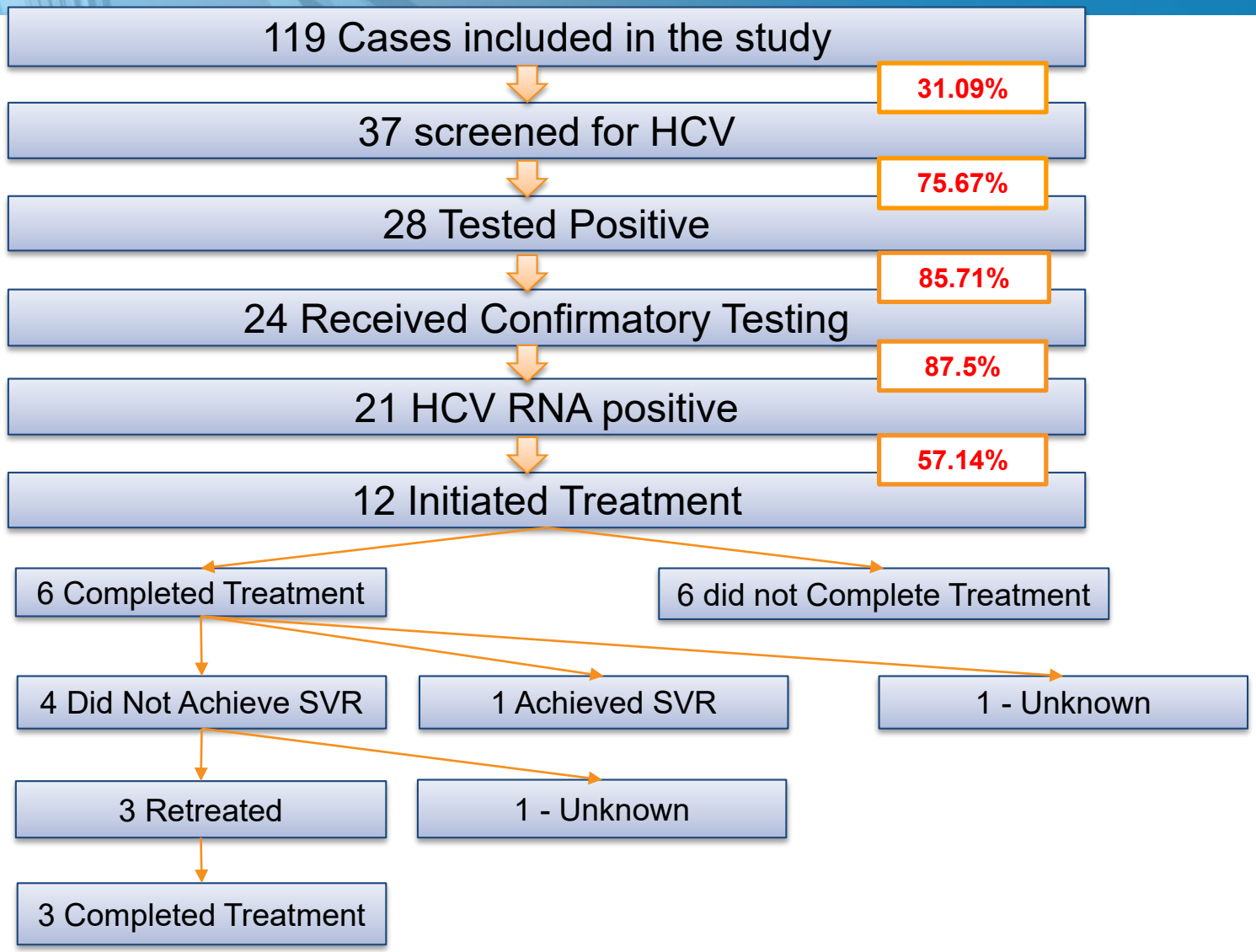
Unspecified Liver Cancer (C22.9) Cases by Fibrosis and Cirrhosis Indicators (50 cases)



- 2 cases of decompensated cirrhosis



HCV Screening/Treatment Cascade in Liver Cancer Patients



Discussion - 1

- **One-third of All liver cancer patients tested were anti-HCV+ (some of this data came from the medical records but most from HCV database on case matching).**

- **50% of HCC cases tested were anti-HCV+**

- **5% of all cases were noted on the records to have chronic HBV infection (but we don't know how many of them were tested, so this is likely an underestimate.**

Discussion - 2

- **Most of the medical records contained little data in the narratives about risk factors or earlier signs and symptoms (Note: reports came only from the most recent facility – cancer-related care was often elsewhere).**

- **Imaging and laboratory tests rarely described in the medical records (see above) – these tests may well have been done in earlier clinical encounters elsewhere).**

- **HCV/HBV testing not referenced in most of the cases**

- **Cirrhosis was rarely mentioned in the narrative records; however, the *signs of cirrhosis were frequently documented*.**

CONCLUSIONS & LIMITATIONS

CONCLUSIONS

A significant proportion of unclassified cases were HCV+, had cirrhosis/fibrosis indicators, or both. This suggests that:

- *HCC is highly under-ascertained among liver cancer cases*
- *Many HCC cases are likely to be HCV-attributable –All persons diagnosed with HCC should have HCV/HBV testing.*
- *Reasonable estimates of HCV-attributable HCC incidence possible with this data and data in this study from registry matching (not discussed)*

LIMITATIONS

Not possible to identify trends in overall HCC or the incidence of HCV-Attributable HCC from this study.

Liver cancer (generally) is unlikely to be completely reported to GCR – the results of this study cannot adjust for these limitations.

Acknowledgements

- CDC Division of Viral Hepatitis
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- NCDC Communicable Diseases Department
- Medical facilities:
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  - Tbilisi Cancer Center
  - Research Institute of Clinical Medicine
  - Elizabeth Blackwell Hospital
  - Medcapital
  - Medsi
  - Gormedi
  - Adjara Oncology Center
  - Unimed Adjara Referral Hospital
  - Kutaisi Oncology Center
  - Kutaisi 4th Mixed Polyclinic
  - St. Nikoloz Surgery and Oncology Center
  - Kutaisi National Medical Center