5th HEPATITIS C TECHNICAL ADVISORY GROUP

TAG Meeting

# ASSESSMENT OF THE NATIONAL HEPATITIS C ELIMINATION PROGRAM: TREATMENT OUTCOMES AND ASSOCIATED FACTORS, 2015-2019

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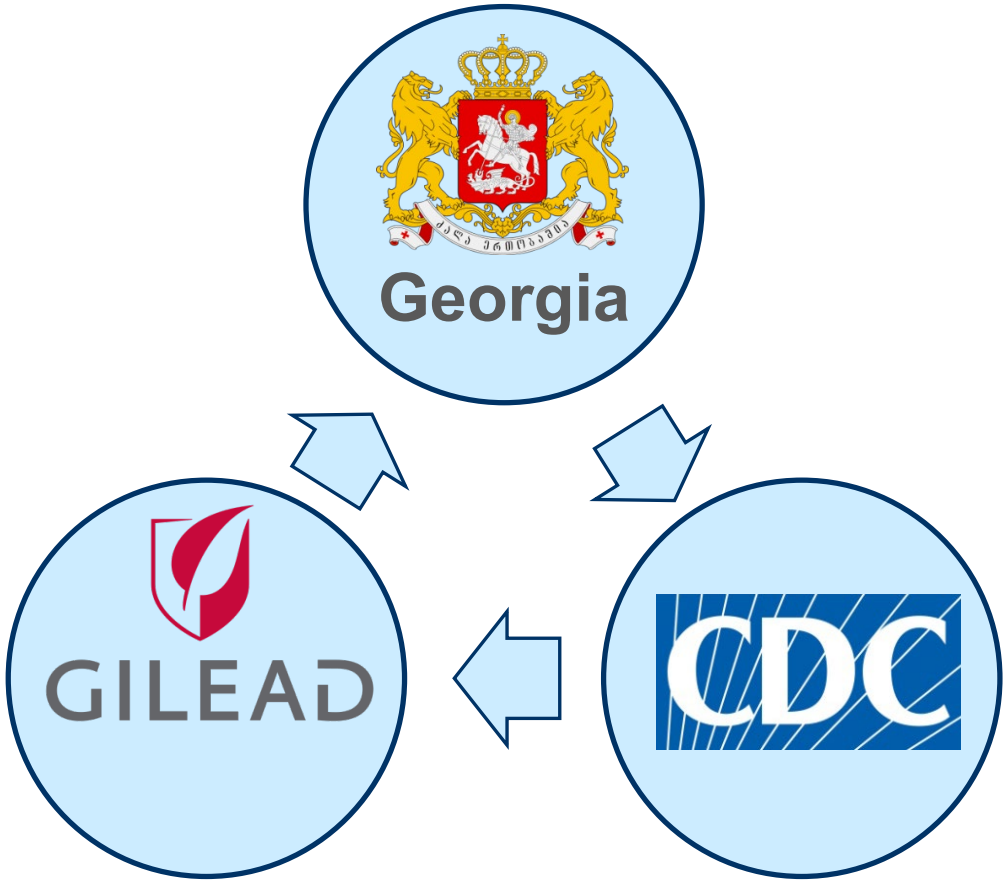
# In April 2015, with a partnership with Gilead Sciences and technical assistance from U.S. CDC, Georgia launched the world's first hepatitis C elimination program.



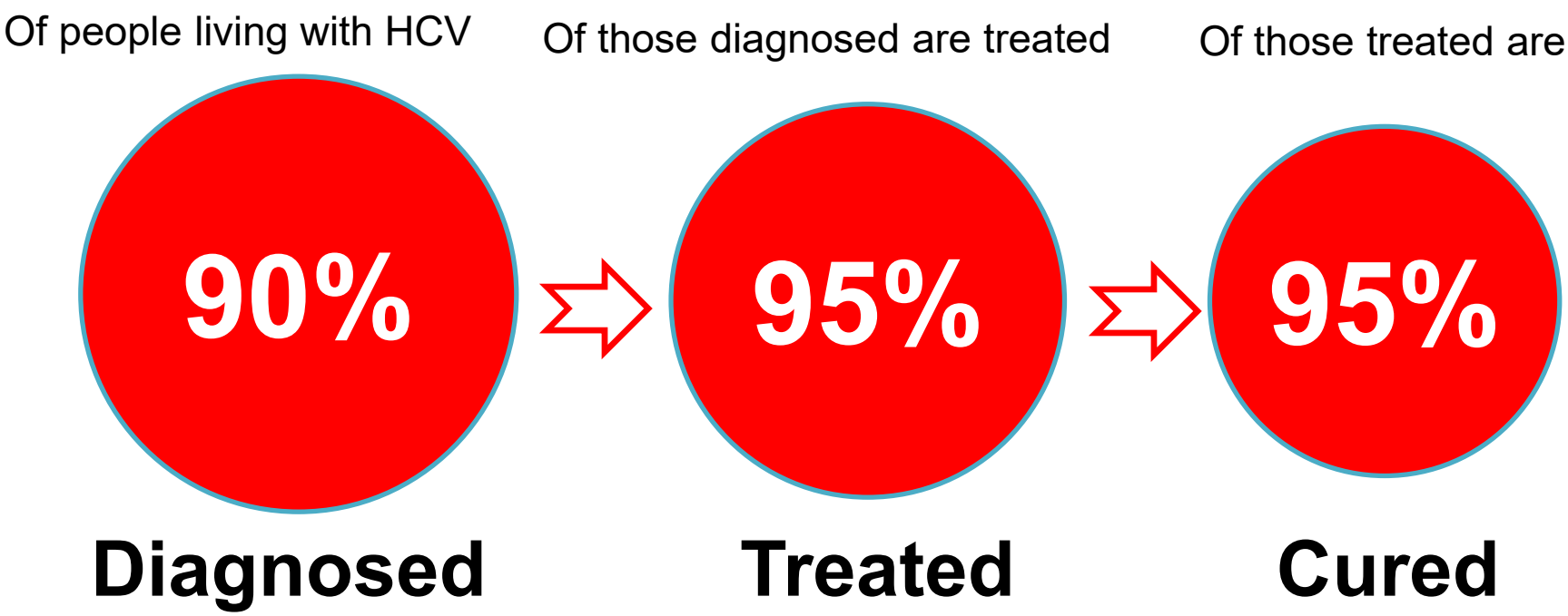
# Hepatitis C Elimination Strategy

## Care and Treatment

**Goal:**

**Provide universal access to HCV care and treatment and to achieve high cure rates**

# Targets: 90-95-95




**Reducing the HCV prevalence by 90% by 2020**

# National Hepatitis C Elimination Program: Implemented in two phases

**April 2015 - June 2016**

**Treated more than 9,000 patients:**

- F3/F4 fibrosis
- Severe extrahepatic manifestations
- HIV/HCV co-infection

**From June 2016**

**Treatment of all patients:**

- Treatment naive
- Treatment experience (including F0 fibrosis)

# National treatment protocols

**(developed by the clinical group in collaboration with international experts: Drs. Afdhal, Zeuzem, Dusheiko, Arora and Thornton)**

| | |
|---|---|
| **April 2015 - March 2016** | **Sofosbuvir (SOF)** |
| | IFN-containing and IFN-free SOF regimens recommended based on various clinical scenarios (genotype, cirrhosis, previous treatment experience) |
| **March 2016 - December 2018** | **Ledipasvir/Sofosbuvir (LDV/SOF)** |
| | LDV/SOF was recommended for all genotypes |
| | Evidence supporting this recommendation included:<br>- High prevalence of 2k/1b recombinant in Georgia<br>- Results of some trials and observational studies indicating that LDV/SOF could be more effective that SOF alone |

This approach had serious opponents, but results exceeded all expectations

# Sofosbuvir/Velpatasvir (Epclusa): Since December 2018

Current treatment regimens: based on Harvoni and Epclusa

| | |
|---|---|
| Ledipasvir/Sofosbuvir (Harvoni) | For all treatment naïve genotype 1 patient |
| Sofosbuvir/Velpatasvir (Epclusa) | For all treatment naïve genotype 2 and 3 patients<br><br>For all treatment experienced patients (regardless of genotype) |

# Hepatitis C Pre-Treatment Evaluation (simplified): Since April 2017

- ✓ Clinical assessment
- ✓ HCV genotyping
- ✓ Complete blood count
- ✓ ALT, AST, creatinine, bilirubin, albumin, INR alkaline phosphatase, G-GT, glucose
- ✓ HBsAg, Anti-HBc total, HIV
- ✓ FIB-4 for liver fibrosis assessment*
- ✓ Abdominal ultrasound

**** Patients with FIB-4 score between the lower and upper cut-off values undergo liver elastography to assess fibrosis stage.***

# Simplified treatment Monitoring: Since August 2019

| Measurements | Treatment Duration (weeks) | | | | | | | | After treatment completion (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 4 | 8 | 12 | 16 | 20 | 24 | 12 or 24 |
| Clinical assessment | | | X | | X | | | X | X |
| HCV RNA Quantitative | | | | | | | | | X*** |
| Complete blood count | | | X | X* | X | | | X | |
| ALT | | | X | X | X | X** | X** | X | |
| AST | | | | | | | | | |
| Creatinine | | | | | X | X* | X* | X | |
| Bilirubin | | | | | X | | | X | |

* *for ribavirin -containing regimens.*

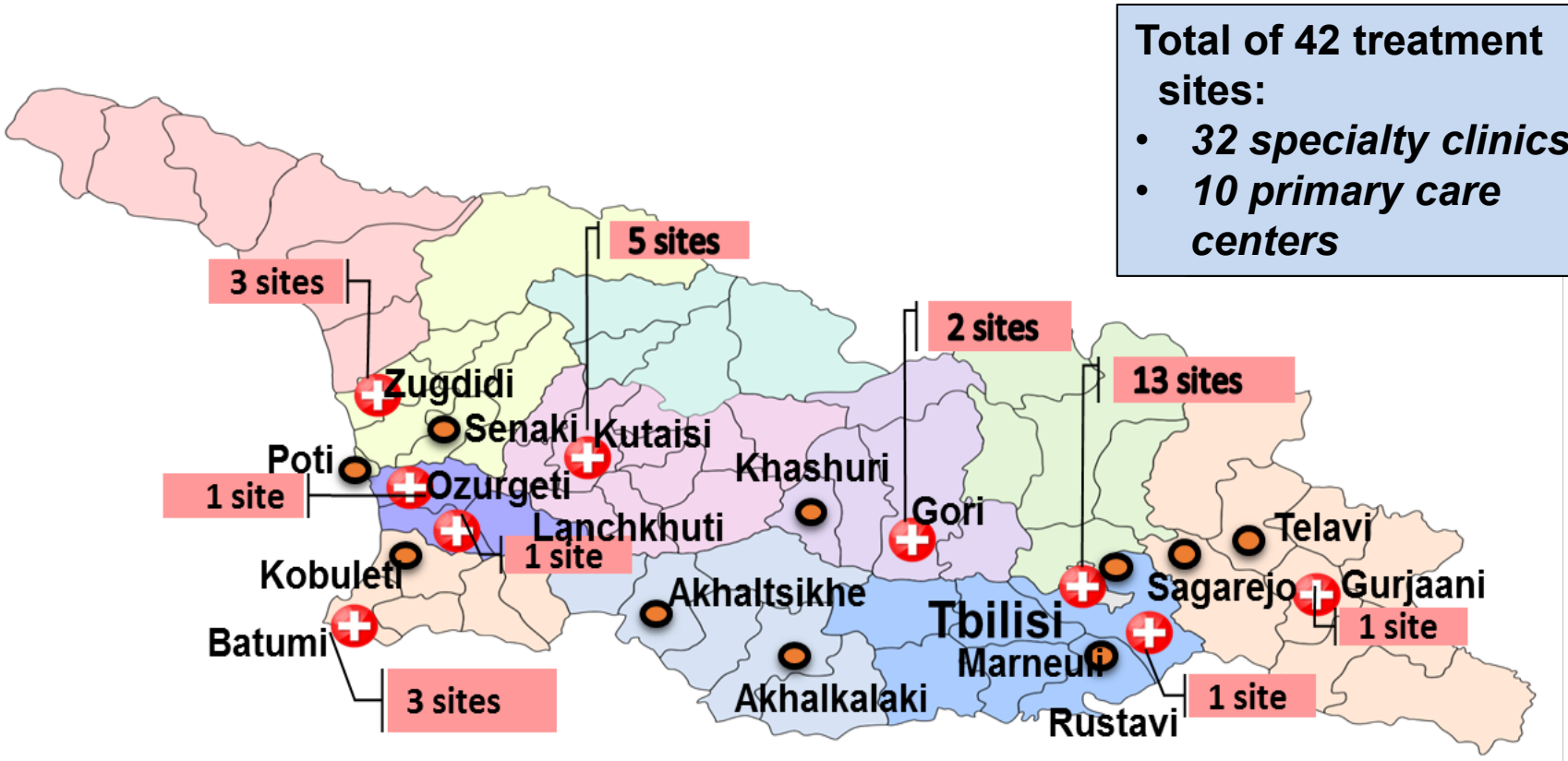
* * *for ribavirin free regimens.*

* * * *HCV RNA level is measured only after treatment termination, for SVR evaluation*

# Linkage to Care

- HCV RNA (VL) test is completely removed from treatment monitoring scheme
- Pretreatment and treatment monitoring diagnostics **became absolutely free for all patients throughout the country from August 2019**
- Preliminary results showed that removal of financial barriers has improved linkage of patients to treatment and care services

# HCV Treatment Sites within Elimination Program, June 30, 2019 (Total=40)

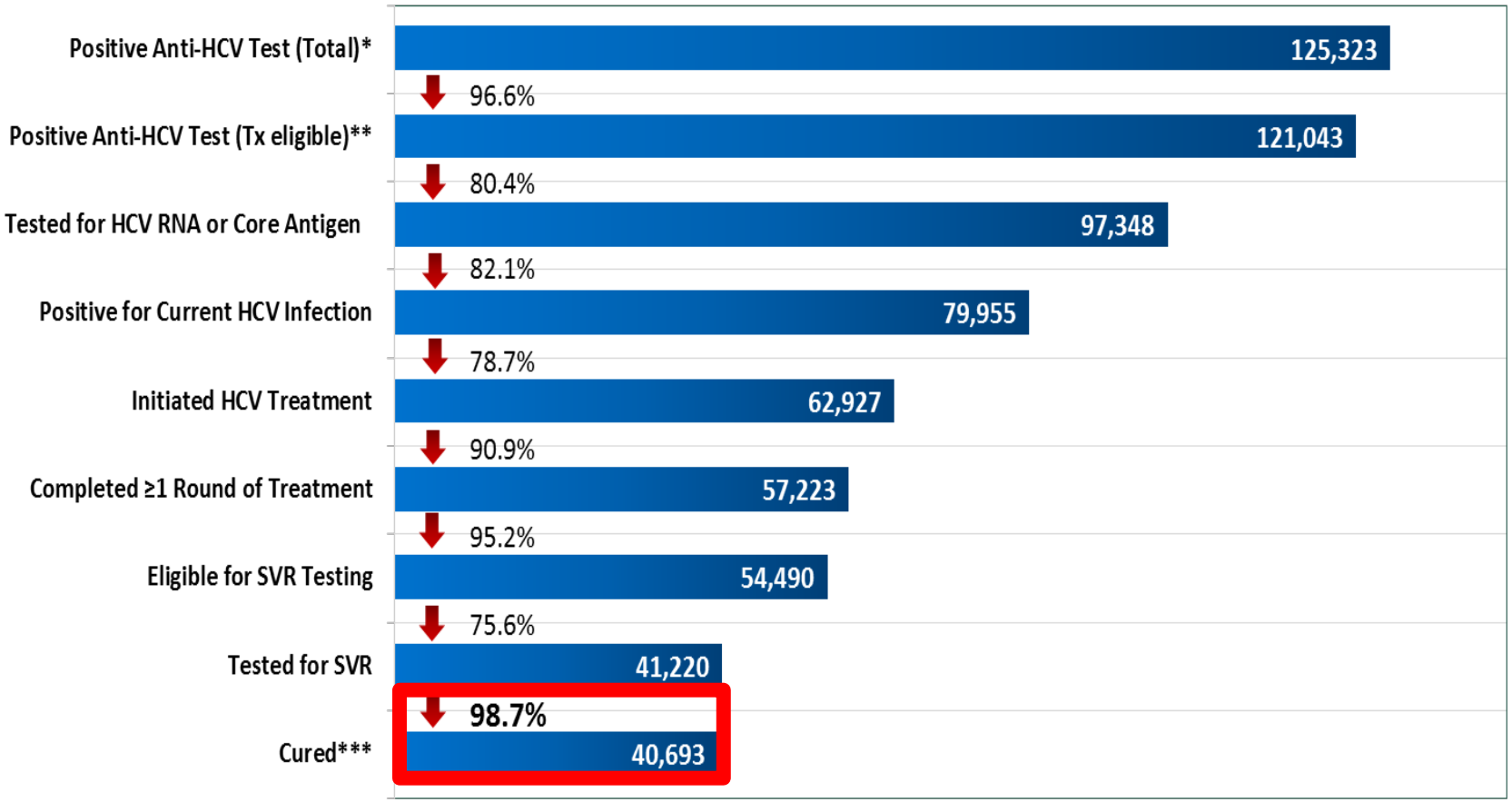



**155 physicians** (ID specialists, gastroenterologist, primary care specialists)

# Decentralization of HCV treatment and care services

## Main milestone within elimination program


# Georgia Hepatitis C Elimination Program Care Cascade, April 28, 2015 – October 31, 2019




*Source: Georgia's HCV Elimination Program Treatment Database*

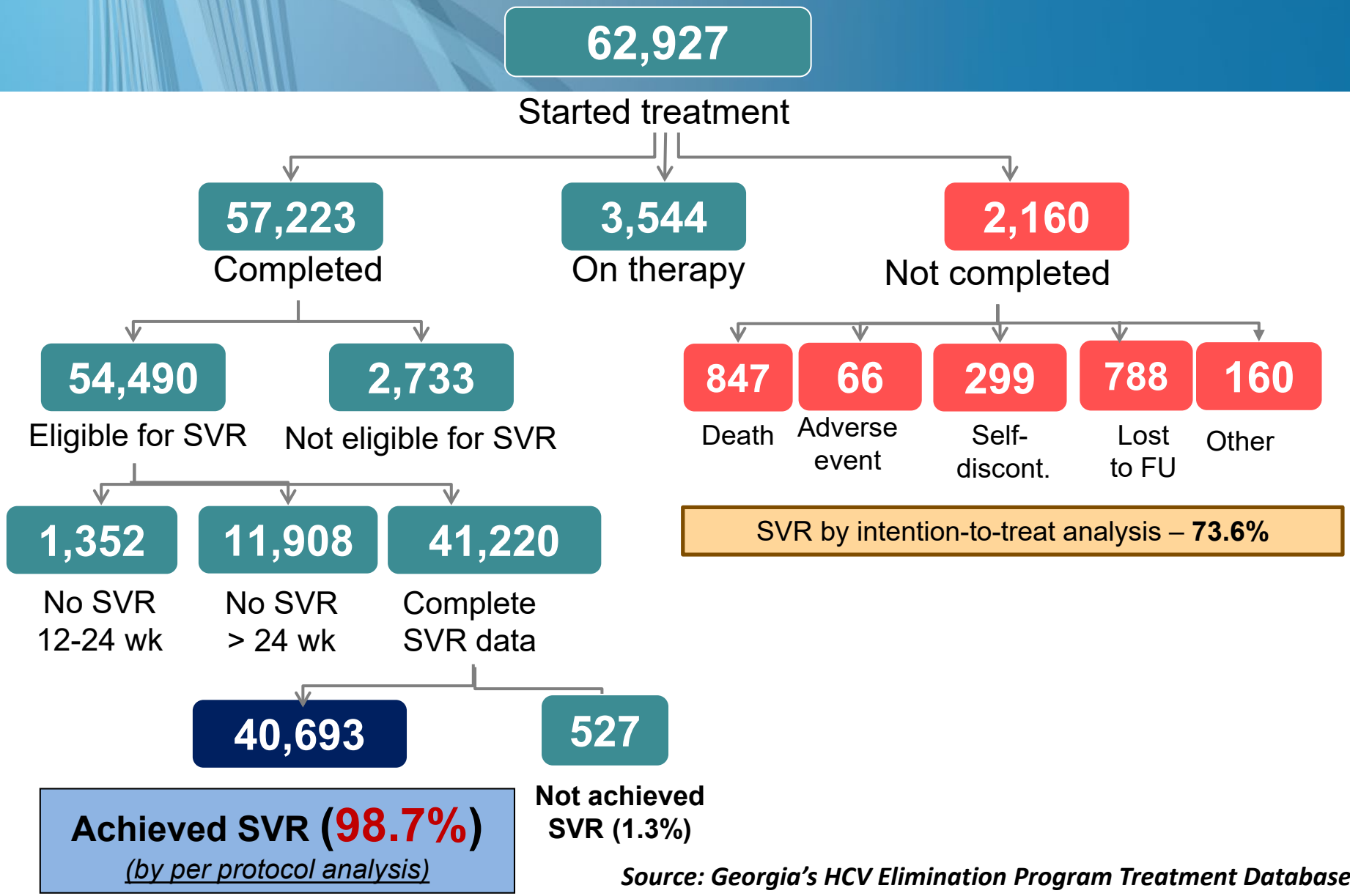
# Results

Treatment Outcomes

# METHODS

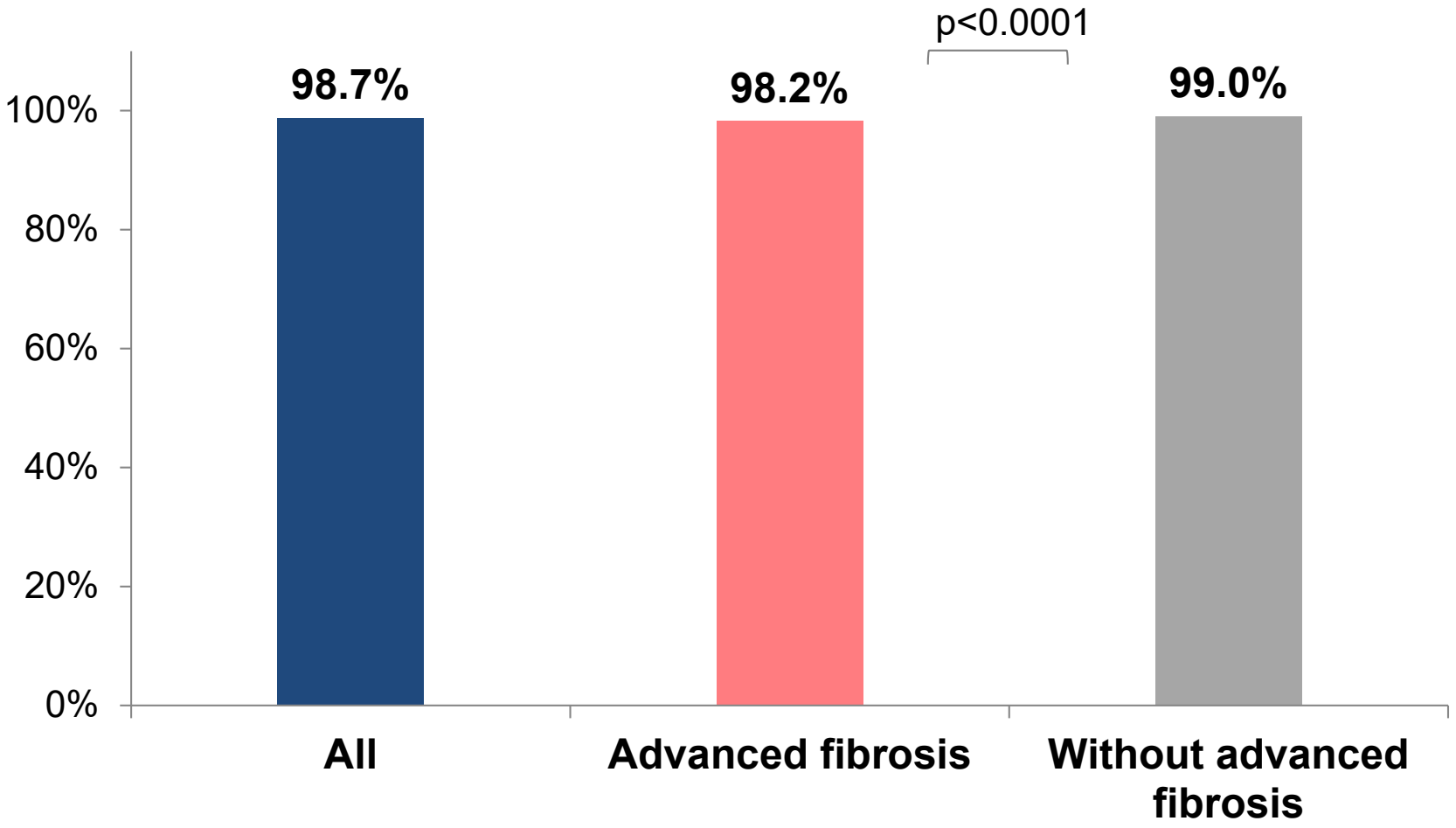
- All data on persons tested for chronic HCV infection through SVR achievement **were extracted from the national HCV treatment database.**
- HCV RNA or HCV core antigen tests are used for confirming chronic HCV infection. **SVR is defined as undetectable HCV RNA 12-24 weeks after treatment termination**.
- SVR rates were calculated using **per-protocol analysis**, which included only those with complete SVR data.
- All analyses were performed with SAS version 9.3 software (SAS Institute, Inc., Cary, NC, USA).

# Cascade of HCV care and treatment outcomes (treatment naïve & treatment experienced) SOF, LDV/SOF & VEL/SOF-based regimens: Apr 28, 2015 – October 31, 2019



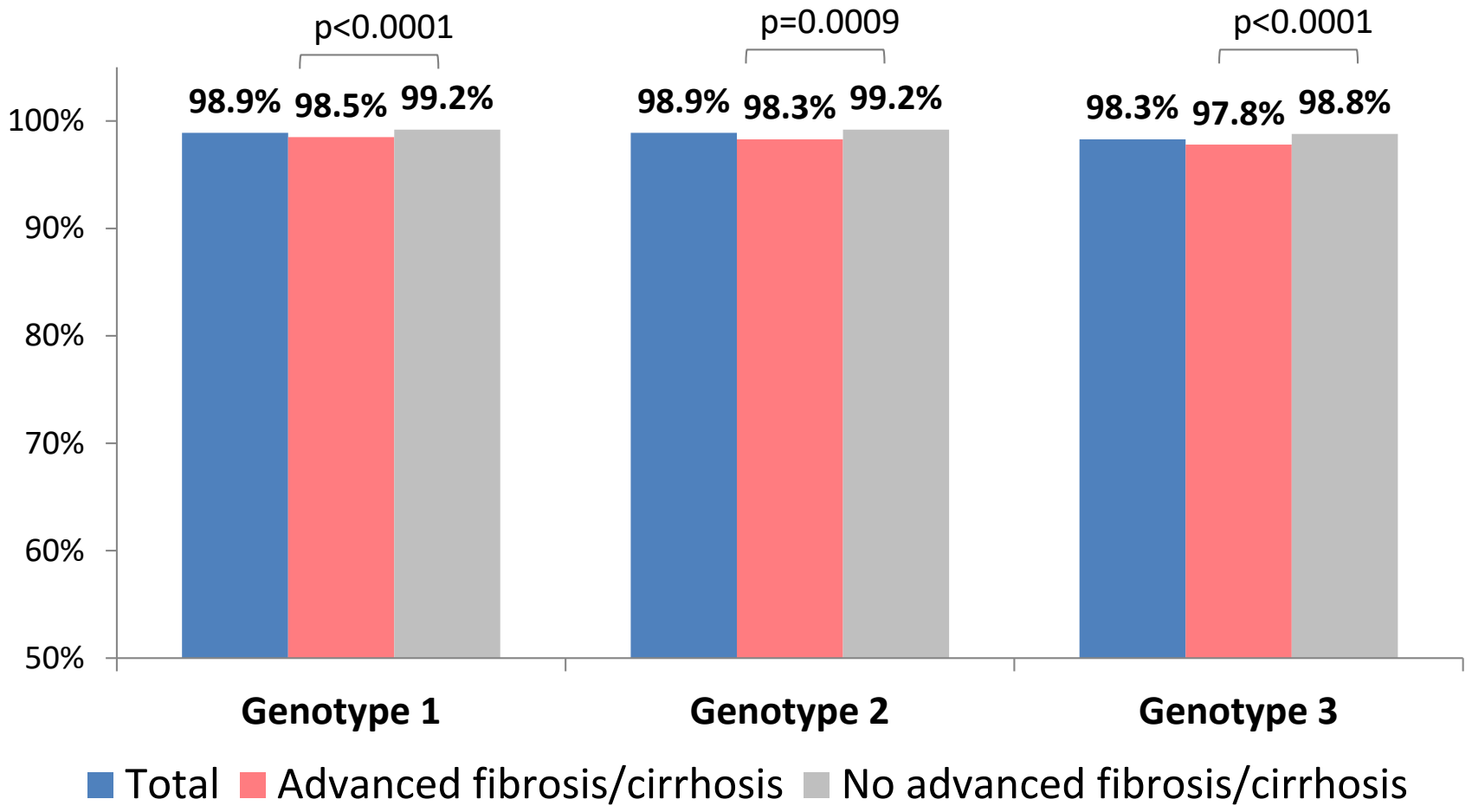

*Source: Georgia's HCV Elimination Program Treatment Database*

# Treatment outcomes by advanced fibrosis/cirrhosis status: April 2015 – October 31, 2019




*Source: Georgia's HCV Elimination Program Treatment Database*

# Treatment outcomes by genotype and advanced fibrosis/cirrhosis status: April 28, 2015 – October 31, 2019

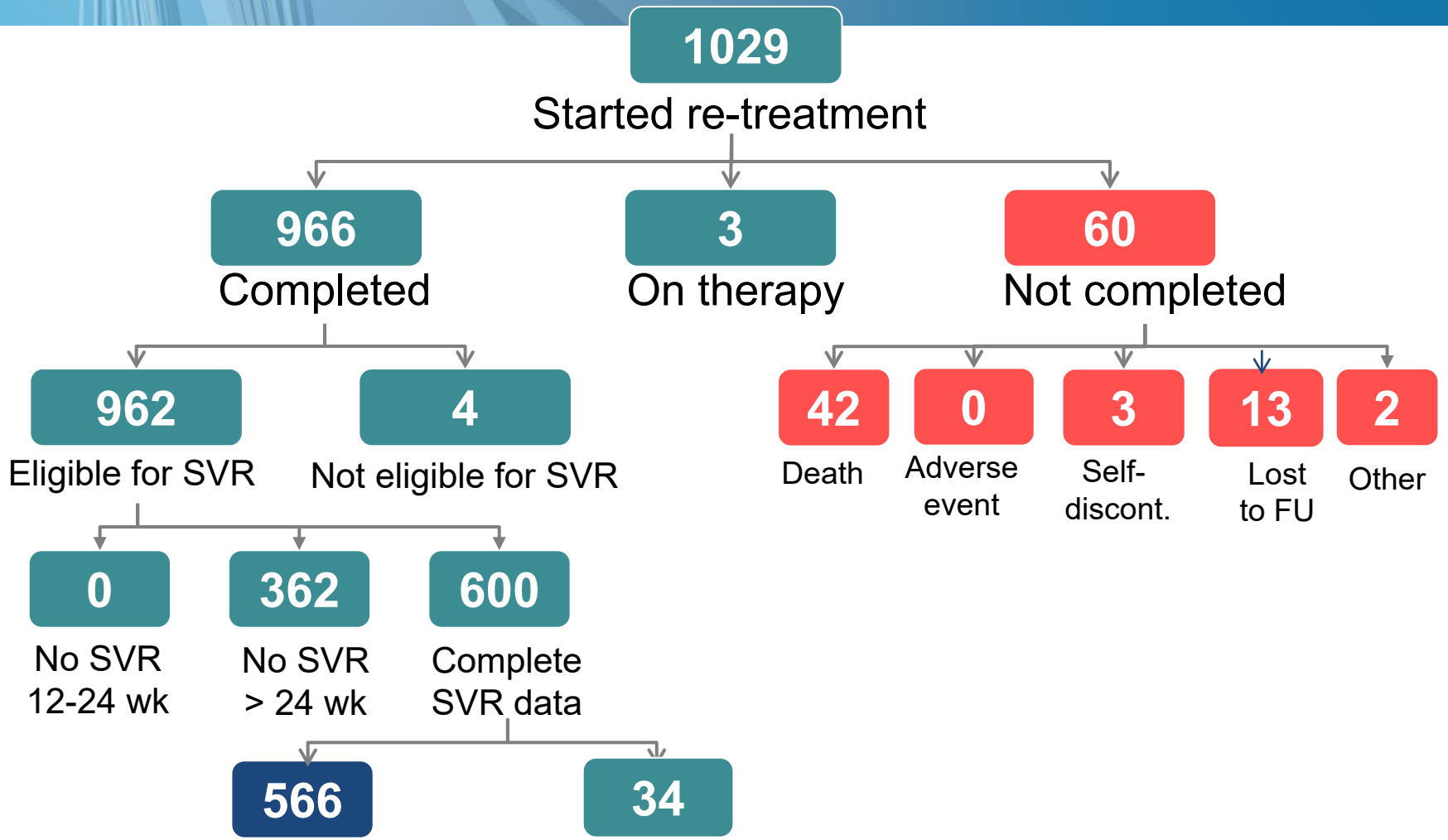



*Source: Georgia's HCV Elimination Program Treatment Database*

# Results

Treatment experienced patients

# Re-treatment of patients with LDV/SOF-based regimens who failed prior SOF-based therapy: March, 2016 – October 31, 2019




*Source: Georgia's HCV Elimination Program Treatment Database*

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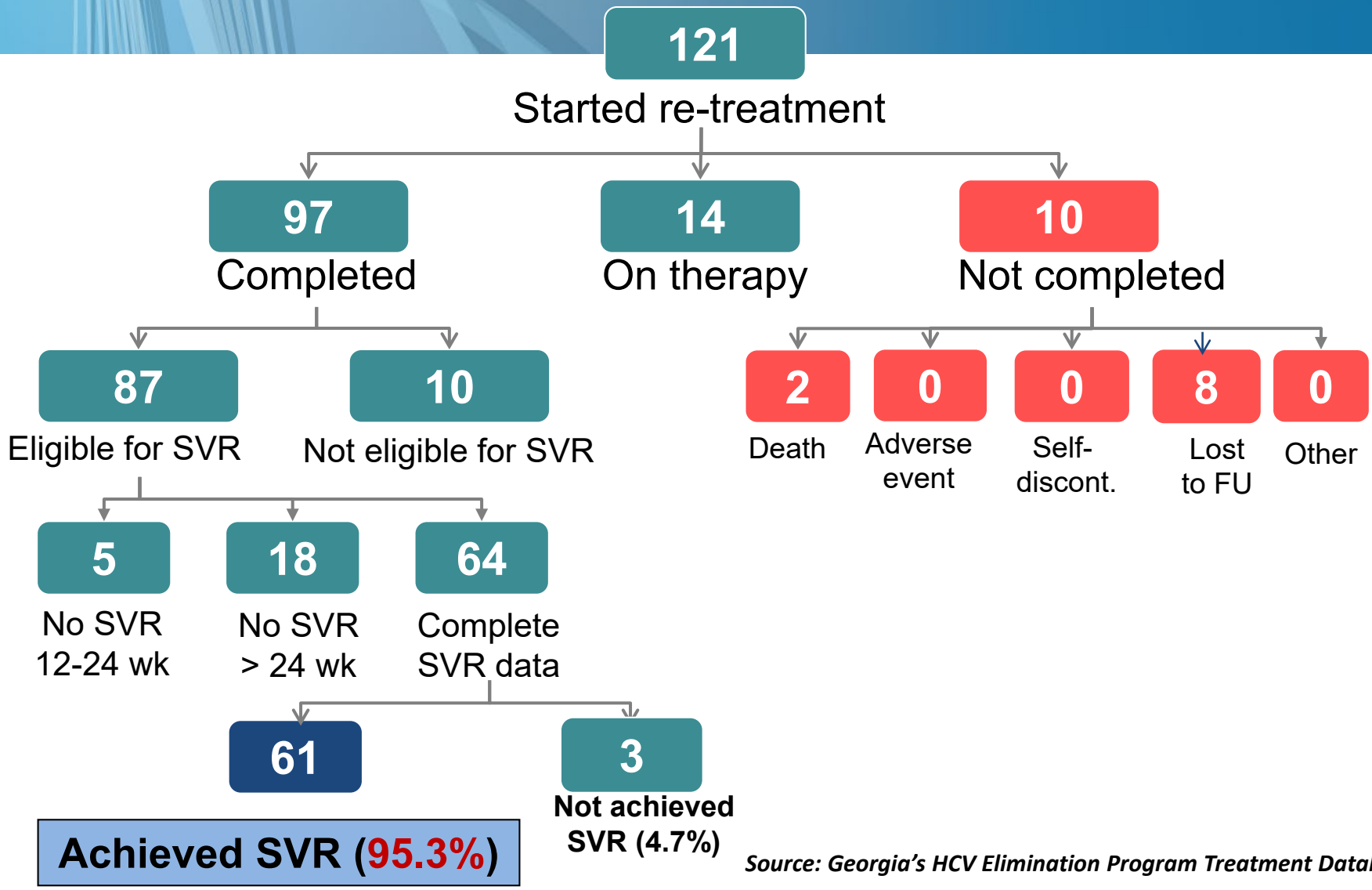


*Source: Georgia's HCV Elimination Program Treatment Database*

# Challenges

- Treatment for **patients with hemodyalisis** is still an issue. Unfortunately, Sofosbuvir-based regimens are contraindicated for this category of patients.

- Availability of **Glecaprevir/Pibrentasvir (Mavyret**) would be ideal, since Mavyret does not contain Sofosbuvir, has a pangenotypic effect and is used without Ribavirin.

- Management of the patients with HBV/HCV coinfection is also challenging. There were a few cases of HBV reactivation during HCV DAA treatment in patients who were HBsAg (+) positive.

- Availability of HBV antiviral drugs (Tenofovir, Entecavir) for patients with HBsAg (+) positive would be ideal for controlling HBV infection during HCV DAA treatment.

# Conclusions

- There is significant progress towards elimination of hepatitis C achieving high cure rates. **Overall SVR is 98.7%.**
- LDV/SOF in combination with RBV was highly effective for genotypes 2 and 3 and can be considered as a **pangenotypic combination at least in Georgian settings.**
- High cure rates were observed in both patients **with or without advance liver fibrosis/cirrhosis** (98.2% vs. 99.0%) as well as in treatment experienced patients (overall SVR=95.3%)
- **High cure rate (**97.4%) were observed in most difficult to treat **HCV genotype 3 patients with cirrhosis**

# Acknowledgements


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