



## CHAI Simple Tool Training Data Exercise

The two data exercises below can be used to practice using both the adult and pediatric CHAI Simple Tools for ARV Forecasting (two separate exercises). All the data required for a successful quantification can be found below. First-time users should consider reviewing the user manual and training slides along with the below data to practice using the tool ahead of formal quantification exercises. The adult training exercise is below, and the pediatric training exercise starts on page 5.

At the end of each exercise is a series of questions to test whether the below data was entered into the Simple Tool correctly. Answers to the questions are provided at the end as well.

The example data below is for a hypothetical country that is phasing in dolutegravir (in the form of TLD) and phasing out other regimens.

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### Adult Simple Tool Data Exercise

#### Baseline Information

- Quantification starts on January 2021
- Current patients on ART
  - 150,000 on first-line
  - 45,000 on second-line
  - 0 on third-line
- New patients added each year
  - Y1: 10,000
  - Y2: 10,000
  - Y3: 7,000
- 1L to 2L migration rate
  - Y1: 5%
  - Y2: 5%
  - Y3: 5%
- 2L to 3L migration rate
  - Y1: 0%
  - Y2: 0%
  - Y3: 0%
- Attrition rate: 2% for both first- and second-line, 0% for third-line
- Yes NVP lead-in dosing with 50% of each bottle required
- Buffer stock: 6 months

#### Current Regimen Splits

- First-line
  - 100,000 patients on TDF+3TC+EFV400
  - 40,000 patients on AZT+3TC+NVP

- 5,000 patients on TDF+3TC+NVP
- 5,000 patients on AZT+3TC+EFV600
- 0 patients on TDF+3TC+DTG
- Second-line
  - 20,000 patients on AZT+3TC+ATV/r
  - 10,000 patients on AZT+3TC+LPV/r
  - 10,000 patients on TDF+3TC+LPV/r
  - 5,000 patients on ABC+3TC+LPV/r
- Third-line
  - No patients on third-line

### **Future Regimen Splits**

- First-line
  - In year 1
    - 90% of new patients on TDF+3TC+DTG
    - 5% on TDF+3TC+EFV400
    - 5% on AZT+3TC+NVP
  - In years 2 and 3
    - 95% of new patients on TDF+3TC+DTG
    - 5% of new patients on TDF+3TC+EFV400
- Second-line
  - In years 1, 2, and 3
    - 90% of new patients on AZT+3TC+ATV/r
    - 10% on TDF+3TC+LPV/r

### **ARV Substitutions**

- 1L: From month 1 to 12, 100% of TDF+3TC+NVP patients will be transitioned to TDF+3TC+DTG
- 1L: From month 1 to 12, 95% of TDF+3TC+EFV400 patients will be transitioned to TDF+3TC+DTG
- 2L: From month 1 to 12, 100% of ABC+3TC+LPV/r patients will be transitioned to AZT+3TC+ATV/r

### **Formulations in-use in Country**

- Triple fixed-dose combinations (FDCs)
  - TDF+3TC+DTG
  - TDF+3TC+EFV400
  - AZT+3TC+NVP
- Duals + single
  - (TDF+3TC)+NVP
  - (AZT+3TC)+EFV600
  - (AZT+3TC)+ATV/r
  - (AZT+3TC)+LPV/r
  - (ABC+3TC)+LPV/r
  - (TDF+3TC)+LPV/r
- Three single tablets

- None

### **Dosing Considerations**

- 100% of TDF+3TC+EFV400 is procured in a 90 pack (90 pills per pack)
- 90% of TLD procured will be in a 90 pack (90 pills per pack), and 10% in a 30 pack (30 pills per pack)

### **Current Stock-on-Hand and Pipeline Orders**

- Existing stock-on-hand
  - ABC/3TC (600/300 mg)
    - 30,000 packs expiring December 2021
  - ATV/r (300/100 mg)
    - 65,000 packs expiring September 2021
    - 170,000 packs expiring June 2022
  - AZT/3TC (300/150 mg)
    - 75,000 packs expiring September 2021
    - 300,000 packs expiring June 2022
  - AZT/3TC/NVP (300/150/200 mg)
    - 450,000 packs expiring March 2022
  - EFV (600 mg)
    - 42,000 packs expiring April 2022
  - LPV/r (200/50 mg)
    - 15,000 packs expiring May 2021
    - 103,000 packs expiring July 2022
  - NVP (200 mg)
    - 10,000 packs expiring October 2021
  - TDF/3TC (300/300 mg)
    - 25,000 packs expiring August 2021
    - 100,000 packs expiring December 2021
  - TDF/3TC/DTG (300/300/50 mg) – 30-tab packs
    - 30,000 packs expiring October 2021
  - TDF/3TC/DTG (300/300/50 mg) – 90-tab packs
    - 70,000 packs expiring October 2021
  - TDF/3TC/EFV (300/300/400 mg)
    - 900,000 packs expiring May 2022
- Existing orders already in pipeline
  - LPV/r (200/50 mg)
    - 100,000 packs to be delivered May 2021
  - TDF/3TC/DTG (300/300/50 mg) – 90-tab packs
    - 50,000 packs to be delivered October 2021

### **Order Timing**

- Orders are set to arrive at ART sites in March 2021 ('9. Ordering' tab)

## Product Costs

Formulation	Price per Pack
TDF/3TC/DTG (300/300/50 mg) – 30-tab pack	\$6.00
TDF/3TC/DTG (300/300/50 mg) – 90-tab pack	\$15.25
TDF/3TC/EFV (300/300/400 mg) – 90-tab pack	\$16.40
AZT/3TC/NVP (300/150/200 mg)	\$6.05
TDF/3TC (300/300 mg)	\$3.75
NVP (200 mg)	\$2.20
AZT/3TC (300/150 mg)	\$5.10
ATV/r (300/100 mg)	\$13.25
LPV/r (200/50 mg)	\$16.90
EFV (600 mg)	\$2.75
ABC/3TC (600/300mg)	\$9.20

## Partner Allocation

- Partners and ARV procurement responsibilities (all three years)
  - PEPFAR is responsible for 100% of TDF-containing products
  - Global Fund is responsible for 50% of everything else
  - MoH is responsible for 50% of everything else

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## Questions (answers can be found on the next page)

- How many total patients are on TDF+3TC+DTG in December 2023?
- How many packs of ATV/r (300/100 mg) tablets are consumed in April 2022?
- How many packs of EFV (600 mg) tablets should be ordered in Q6?
- What is the three-year total cost of this sample quantification?
- How many packs of TDF/3TC/EFV (300/300/600 mg) tablets is PEPFAR responsible for procuring in year 3?

### Answers to above questions

- How many total patients are on TDF+3TC+DTG in December 2023?
  - **106,428**
- How many packs of ATV/r (300/100 mg) tablets are consumed in April 2022?
  - **33,759**
- How many packs of EFV (600 mg) tablets should be ordered in Q6?
  - **13,336**
- What is the three-year total cost of this sample quantification?
  - **\$64,004,102**
- How many packs of TDF/3TC/EFV (300/300/400 mg) tablets is PEPFAR responsible for procuring in year 3?
  - **8,820**

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## Pediatric Simple Tool Data Exercise

### Baseline Information

- Quantification starts on January 2021
- Current patients on ART
  - 1,100 on first-line
  - 500 on second-line
  - 0 on third-line
- New patients added each year
  - Y1: 200
  - Y2: 300
  - Y3: 400
- 1L to 2L migration rate
  - Y1: 5%
  - Y2: 5%
  - Y3: 5%
- 2L to 3L migration rate
  - Y1: 0%
  - Y2: 0%
  - Y3: 0%
- Attrition rate: 2% for both first- and second-line, 0% for third-line
- Yes NVP lead-in dosing with 50% of each bottle required
- Buffer stock: 6 months

### Current Regimen Splits

- First-line
  - 800 patients on ABC+3TC+LPV/r
  - 200 patients on AZT+3TC+LPV/r

- 100 patients on ABC+3TC+EFV
- 0 patients on ABC+3TC+DTG
- Second-line
  - 250 patients on AZT+3TC+LPV/r
  - 250 patients on ABC+3TC+LPV/r
- Third-line
  - No patients on third-line

#### Future Regimen Splits

- First-line
  - In year 1
    - 90% of new patients on ABC+3TC+DTG
    - 5% on ABC+3TC+LPV/r
    - 5% on AZT+3TC+LPV/r
  - In years 2 and 3
    - 95% of new patients on ABC+3TC+DTG
    - 5% of new patients on ABC+3TC+LPV/r
- Second-line
  - In years 1, 2, and 3
    - 95% of new patients on ABC+3TC+LPV/r
    - 5% on AZT+3TC+LPV/r

#### Patient Breakdown by Weight

Weightband	% of Patients
0-5.9 kg	25
6-9.9kg	198
10-13.9kg	191
14-19.9kg	211
20-24.9kg	182
25-34.9kg	390
35kg+	403

#### ARV Substitutions

- 1L: From month 1 to 12, 100% of ABC+3TC+EFV patients will be transitioned to ABC+3TC+DTG
- 1L: From month 1 to 12, 80% of ABC+3TC+LPV/r patients will be transitioned to ABC+3TC+DTG
- 2L: From month 1 to 8, 90% of AZT+3TC+LPV/r patients will be transitioned to ABC+3TC+LPV/r

#### Formulations in-use in Country

- All regimens (1L and 2L) are made up of a dual FDC + a single

#### Form and Dose

- DTG
  - 100% of patients 0-19.9kg are taking DTG 10mg (disp, scored)

- 100% of patients >20kg are taking DTG 50mg
- EFV
  - 100% of patients 10-24.9kg are taking EFV 200mg scored
  - 100% of patients >25kg are taking EFV 600mg
- LPV/r
  - 50% of patients 0-9.9kg are taking LPV/r oral solution, and the other 50% are taking LPV/r pellets
  - 100% of patients 10-24.9kg are taking LPV/r 100/25mg tablets (in a 60-tab pack)
  - 100% of patients >25kg are taking LPV/r 200/50 mg tablets (in a 120-tab pack)
- ABC/3TC
  - 100% of patients 0-24.9kg are taking ABC/3TC (120/60mg) dispersible and scored tablets (in a 30-tab pack)
  - 100% of patients >25kg are taking ABC/3TC 600/300mg tablets
- AZT/3TC
  - 100% of patients 0-24.9kg are taking AZT/3TC (60/30mg) dispersible tablets
  - 100% of patients >25kg are taking AZT/3TC 300/150mg tablets

#### **Current Stock-on-Hand and Pipeline Orders**

- Existing stock-on-hand
  - DTG 10mg tabs disp, scored
    - 400 packs expiring in Aug 2021
  - DTG 50mg tabs
    - 400 packs expiring in Aug 2021
  - EFV 200mg scored
    - 4,000 packs expiring in Jan 2022
  - EFV 600mg
    - 4,000 packs expiring in May 2021
  - LPV/r oral solution
    - 500 packs expiring in Nov 2021
  - LPV/r 40/10mg oral pellets
    - 500 packs expiring in July 2021
  - LPV/r 100/25mg tablets
    - 10,000 packs expiring in June 2022
  - LPV/r 200/50mg tablets
    - 2,000 packs expiring in Feb 2022
  - ABC/3TC 120/60mg disp, scored tablets
    - 20,000 packs expiring in June 2021
  - ABC/3TC 600/300mg tablets
    - 2,000 packs expiring in Aug 2021
    - 2,000 packs expiring in Feb 2022
  - AZT/3TC 60/30mg disp tablets
    - 4,000 packs expiring in Sep 2021
  - AZT/3TC 300/150mg tablets
    - 500 packs expiring in Mar 2021

- 4,000 packs expiring in Nov 2021
- Existing orders already in pipeline
  - DTG 10mg tabs disp, scored
    - 2,000 packs to be delivered June 2021

### Order Timing

- Orders are set to arrive at ART sites in March 2021 ('9. Ordering' tab)

### Product Costs

Formulation	Price per Pack
DTG 10mg tabs disp, scored	\$4.50
DTG 50mg tabs	\$2.60
EFV 600mg tabs	\$2.50
LPV/r oral solution	\$30.82
LPV/r 40/10mg oral pellets	\$15.00
LPV/r 100/25mg tablets	\$6.50
LPV/r 200/50mg tablets	\$18.65
ABC/3TC 120/60mg disp, scored tablets	\$3.30
ABC/3TC 600/300mg tablets	\$9.20
AZT/3TC 60/30mg disp tablets	\$1.90
AZT/3TC 300/150mg tablets	\$5.25

### Partner Allocation

- Partners and ARV procurement responsibilities (all three years)
  - PEPFAR is responsible for 100% of DTG-containing products
  - Global Fund is responsible for 100% of ABC- and EFV-containing products
  - MoH is responsible for 100% of AZT- and LPV/r-containing products

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### Questions (answers can be found on the next page)

- How many total patients are on ABC+3TC+DTG in December 2023?
- How many packs of DTG (10 mg) disp., scored tablets are consumed in April 2022?
- How many packs of LPV/r (100/25 mg) tablets should be ordered in Q6?
- What is the three-year total cost of this sample quantification?
- How many packs of DTG (10 mg) disp., scored tablets are PEPFAR responsible for procuring in year 2?



### Answers to above questions

- How many total patients are on ABC+3TC+DTG in December 2023?
  - **1,396**
- How many packs of DTG (10 mg) disp, scored tablets are consumed in April 2022?
  - **330**
- How many packs of LPV/r (100/25 mg) tablets should be ordered in Q6?
  - **2,517**
- What is the three-year total cost of this sample quantification?
  - **\$1,104,547**
- How many packs of DTG (10 mg) disp., scored tablets are PEPFAR responsible for procuring in year 2?
  - **4,629**