

# Ferric Carboxymaltose in the Treatment of Iron Deficiency Anemia in Patients with Pregnancy, Inflammatory Bowel Disease, Heart Failure and Bariatric Surgery Under the Payer’s Perspective of the Supplementary System in Brazil

Clemente V<sup>1</sup>, Malard W<sup>2</sup>, Campagnaro M<sup>1</sup> Ramirez de Arellano Serna A<sup>3</sup>  
1 CSLVifor Pharma, São Paulo, SP, Brazil. 2 CSL Vifor, Ribeirão Preto, SP, Brazil. 3 CSL Vifor Zurich, Switzerland,

EE721

## INTRODUCTION

- Iron deficiency anemia (IDA) affects between 4-6 billion people<sup>1</sup>, and thus remains the greatest nutritional deficiency worldwide. The cause of IDA is multifactorial and can be largely attributed to inadequate daily iron intake, malabsorption, blood loss and increased iron demands such as pregnancy<sup>2</sup>. Iron deficiency (ID) is a risk factor because it impedes the erythropoietic response to acute and chronic needs.
- The importance of ID and its impact on patient management and outcomes has been highlighted in various scenarios, including heart failure (HF), inflammatory bowel disease (IBD), bariatric surgery (BS) pregnancy and post-partum women (PPW)<sup>3</sup>.
- Aproximately 25% of the Brazilian population has access to the private supplementary health care system (SHS). In 2023, ferric carboxymaltose (FCM) was incorporated into the SHS, becoming a new product available for the treatment of IDA.

## OBJECTIVES

- This study aims to estimate the potential target population with ID and ID/IDA regarding the five conditions. Likewise, we conducted a budget impact analysis (BIA) as for the introduction of FCM to replace oral iron and low dose IV iron as for pregnant and post-partum women affected by IDA in Brazil.

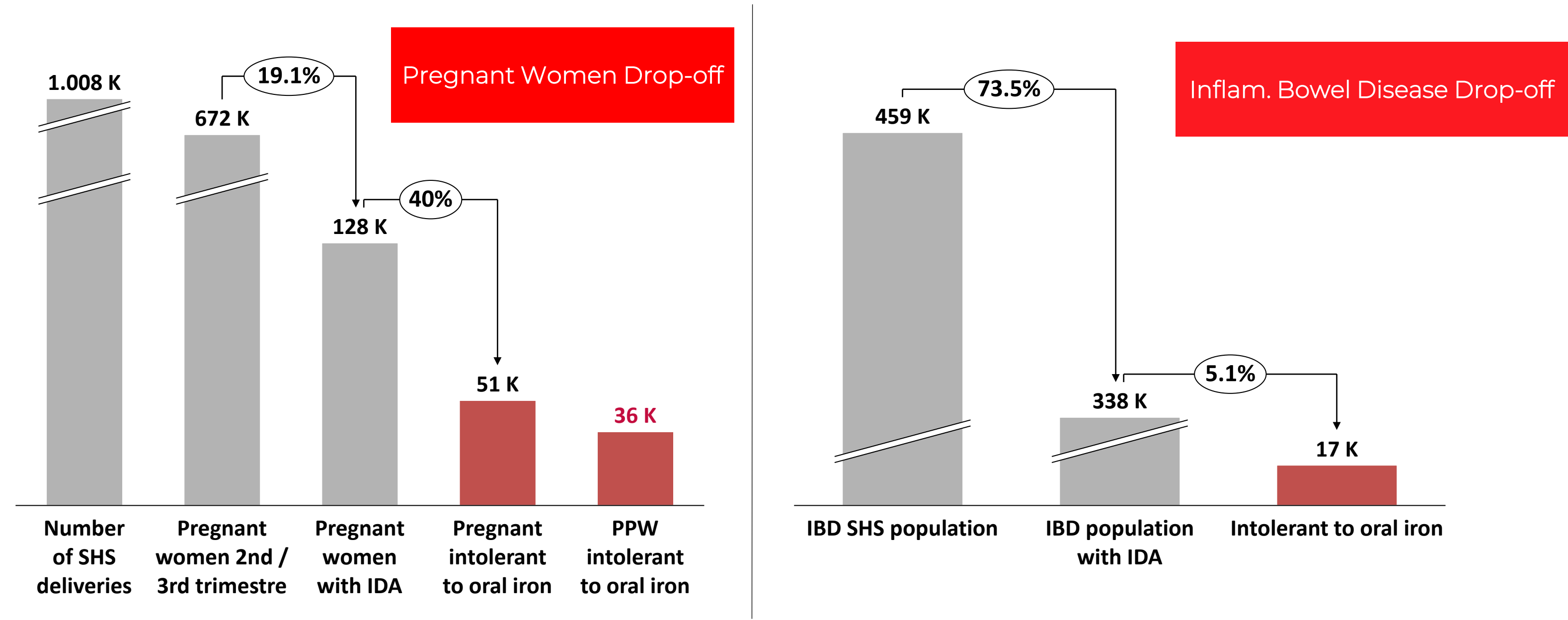
## METHODS

- A study was carried out with data obtained on the Brazilian Institute of Geography and Statistics (IBGE), and SHS data platform, which were analyzed to estimate the target populations of the five conditions in Brazil.
- A first BIA was performed in order to estimate the economic impact of FCM versus oral iron considering different scenarios of uptake rates of FCM for pregnant and PPW patients with IDA. The analysis covers a 5-year period from 2023 to 2027 with the following uptake rates: 10%, 30%, 50%, 70% and 90%.
- A second BIA was conducted to estimate the economic impact of replacing low-dose intravenous iron (LD-IV Iron) with FCM for the two target populations and under the same uptake hypotheses.
- The costs per treatment of pregnant women were: FCM (BRL 2,632.96); LD-IV iron (BRL 9,464.31); oral iron (BRL 270.58). While for post partum women they were: FCM (BRL 4,608.41); LD-IV iron (BRL 9,789.57); oral iron (BRL 148.80).

## RESULTS

- 158,695 total eligible patients with IDA were estimated: (51,363) pregnancies; (36,075) postpartum women (PPW); (17,224) inflammatory bowel disease (IBD); (17,958) heart failure (HF); and (36,075) bariatric surgery (BS) (**Figure 1 & 2**).
- FCM in the treatment of anemia due to IDA in pregnant women, in the first year may generate an extra cost of BRL 12,133,892 and in the fifth year BRL 109,205,032. Over the 5-year period an extra cost of BRL 303,347,310. (**Table 1**).
- For the PPW population, FCM may generate an extra cost of BRL 402,201,075 over the 5-year period by gradually replacing iron therapies. (**Table 2**).
- In turn, the gradual replacement of low-dose IV iron with FCM in pregnant women may generate a saving of BRL 35,087,863 in the first year and BRL 315,790,768 in the fifth year. For the period 2023-2027, we estimate and expected accumulated saving of BRL 877,196,577. (**Table 3**)
- As for the PPW population, FCM may generate a potential saving of BRL 467,275,869 over low-dose IV iron for the entire period. (**Table 4**).

**Figure 1.** Flowchart and segmentation to estimate the target population of pregnant women, PPW and IBD co-morbid with IDA in Brazil from a SHS perspective in 2023.



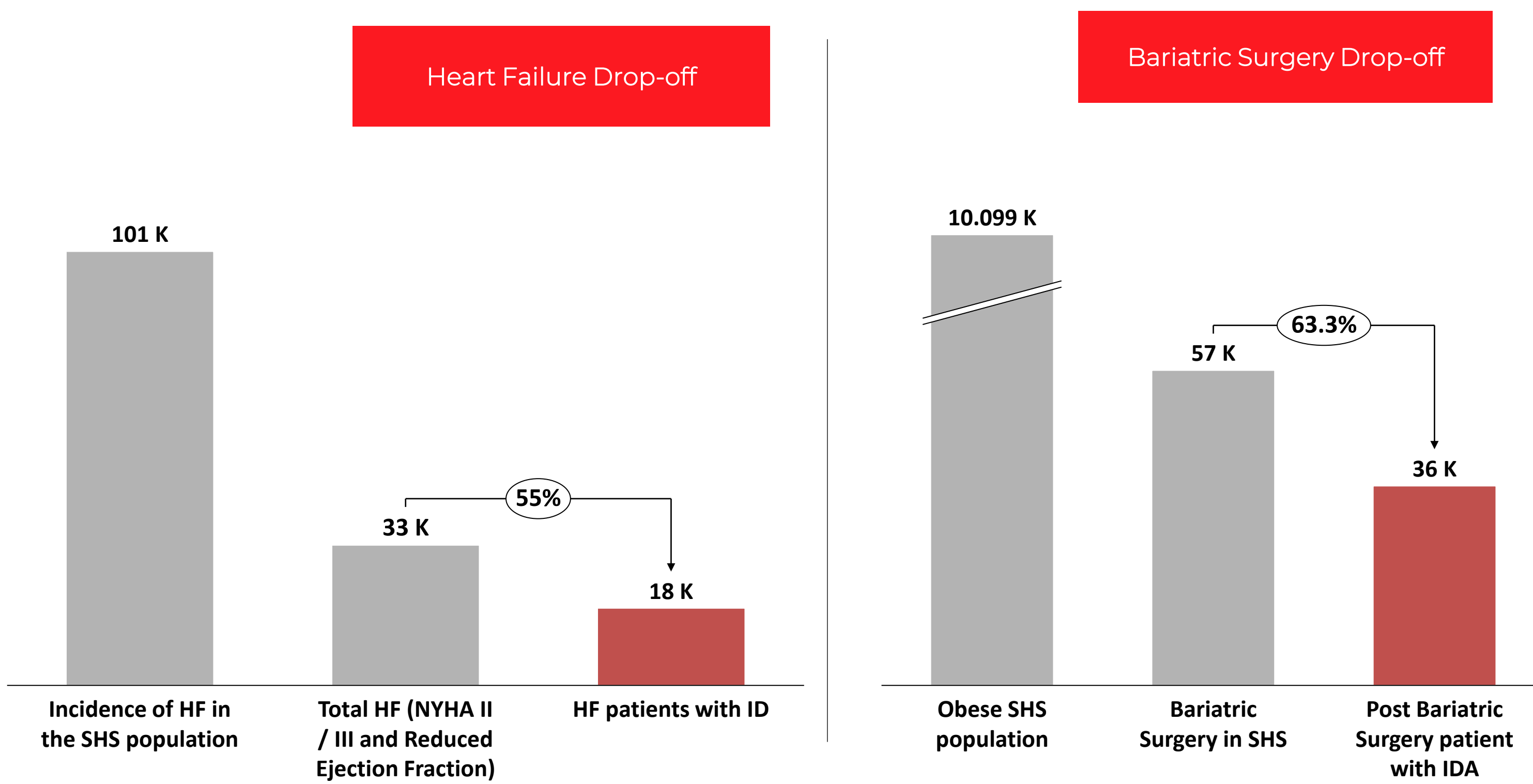
## CONCLUSIONS

- High-dose Intravenous iron FCM is expected to bring about a predictable and affordable extra cost by replacing oral iron. In turn, FCM may generate potential cost-savings by gradually replacing low-dose IV iron for pregnant and post-partum women in Brazil.

## REFERENCES.

1. Vos T, Abajobir AA, Abate KH, Abbafati C, Abbas KM, Abd-Allah F, et al. Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2017;390(10100):1211-59; 2. NICE. Anaemia - iron deficiency: what causes it? [Available from: <https://cks.nice.org.uk/topics/anaemia-iron-deficiency/background-information/causes/>]; 3. Madu AJ, Ughasoro MD. Anaemia of Chronic Disease: An In-Depth Review. Medical Principlesand Practice. 2017;26(1):1-9; 4.

**Figure 2.** Flowchart and segmentation to estimate the target population of HF and BS patients co-morbid ID/IDA in Brazil from a SHS perspective in 2023.



**Table 1.** Analysis of the budgetary impact of incorporating FCM into the SHS for the treatment of Pregnant women with IDA who are intolerant to oral treatment.

	Baseline scenario (oral iron) (BRL)	Gradual Uptake of FCM (BRL)	Budget Impact (BRL)
2023	13'897'800	26'031'692	12'133'892
2024	13'897'800	50'299'477	36'401'677
2025	13'897'800	74'567'262	60'669'462
2026	13'897'800	98'835'047	84'937'247
2027	13'897'800	123'102'832	109'205'032
Total			303'347'310

**Table 2.** Analysis of the budgetary impact of incorporating FCM into the SHS for the treatment of Postpartum Women with IDA who are intolerant to oral treatment.

	Baseline scenario (oral iron) (BRL)	Gradual Uptake of FCM (BRL)	Budget Impact (BRL)
2023	5'367'960	21'456'003	16'088'043
2024	5'367'960	53'632'089	48'264'129
2025	5'367'960	85'808'175	80'440'215
2026	5'367'960	117'984'261	112'616'301
2027	5'367'960	150'160'347	144'792'387
Total			402'201'075

**Table 3.** Analysis of the budgetary impact of FCM versus low-dose IV iron for the treatment of pregnant women with IDA who are intolerant to oral treatment.

	Baseline Scenario (Low-Dose IV iron) (BRL)	Gradual Uptake of FCM (BRL)	Budget Impact (BRL)
2023	486'115'355	451'027'492	-35'087'863
2024	486'115'355	380'851'766	-105'263'589
2025	486'115'355	310'676'040	-175'439'315
2026	486'115'355	240'500'313	-245'615'042
2027	486'115'355	170'324'587	-315'790'768
Total			-877'196'577

**Table 4.** Analysis of the budgetary impact of FCM versus low-dose IV iron for the treatment of post-partum women with IDA who are intolerant to oral treatment.

	Baseline Scenario (Low-Dose IV iron) (BRL)	Gradual Uptake of FCM (BRL)	Budget Impact (BRL)
2023	353'158'738	334'467'703	-18'691'035
2024	353'158'738	297'085'634	-56'073'104
2025	353'158'738	259'703'564	-93'455'174
2026	353'158'738	222'321'495	-130'837'243
2027	353'158'738	184'939'425	-168'219'313
Total			-467'275'869

(\*1 USD\$ = 5,13 BRL; 1 Euro € = 5,37 BRL)