

# Evaluating the Clinical and Socioeconomic Impact of Improved CKD Diagnosis and Adherence to Guideline-Directed Medical Therapy in Australia, Brazil, and China: An Impact CKD Analysis

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## Key Findings

Increased diagnosis and improved adherence to guideline-directed medical therapy (GDMT) in patients with CKD was projected to result in:



**46-53% reduction**  
in dialysis prevalence



**9-14% reduction**  
in all major clinical events



**39-45% reduction**  
in RRT costs



**3-8% increase**  
in net workdays, productivity,  
and tax revenue

## Conclusions

- This analysis shows that improved CKD diagnosis and adherence to GDMT can drastically reduce dialysis prevalence, cardiovascular and acute kidney injury events, and healthcare costs across Australia, Brazil, and China.
- These findings highlight the need for policies that incentivize early detection and optimized management of CKD to mitigate the burden on patients, healthcare systems, and society.

## Introduction

- CKD is underdiagnosed and undertreated despite availability of interventions effective in delaying progression and reducing clinical events.



### Objective

To comprehensively illustrate the clinical and socioeconomic benefits of increased diagnosis and improved adherence to GDMT across countries with varying demographics, health system financing, and access-to-care.

## Methods

- Three country settings (Australia, Brazil, and China) were simulated for 25 years using the validated IMPACT CKD model.
- Two scenarios were compared: Current practice versus target practice (25% increased diagnosis plus 75% adherence to GDMT including glucose-lowering, lipid-lowering, antihypertensive, and lifestyle interventions).
- Various sources were used to establish current use rates for GDMT components. Target use was set to 75% of eligible patients, with eligibility informed by guidelines.

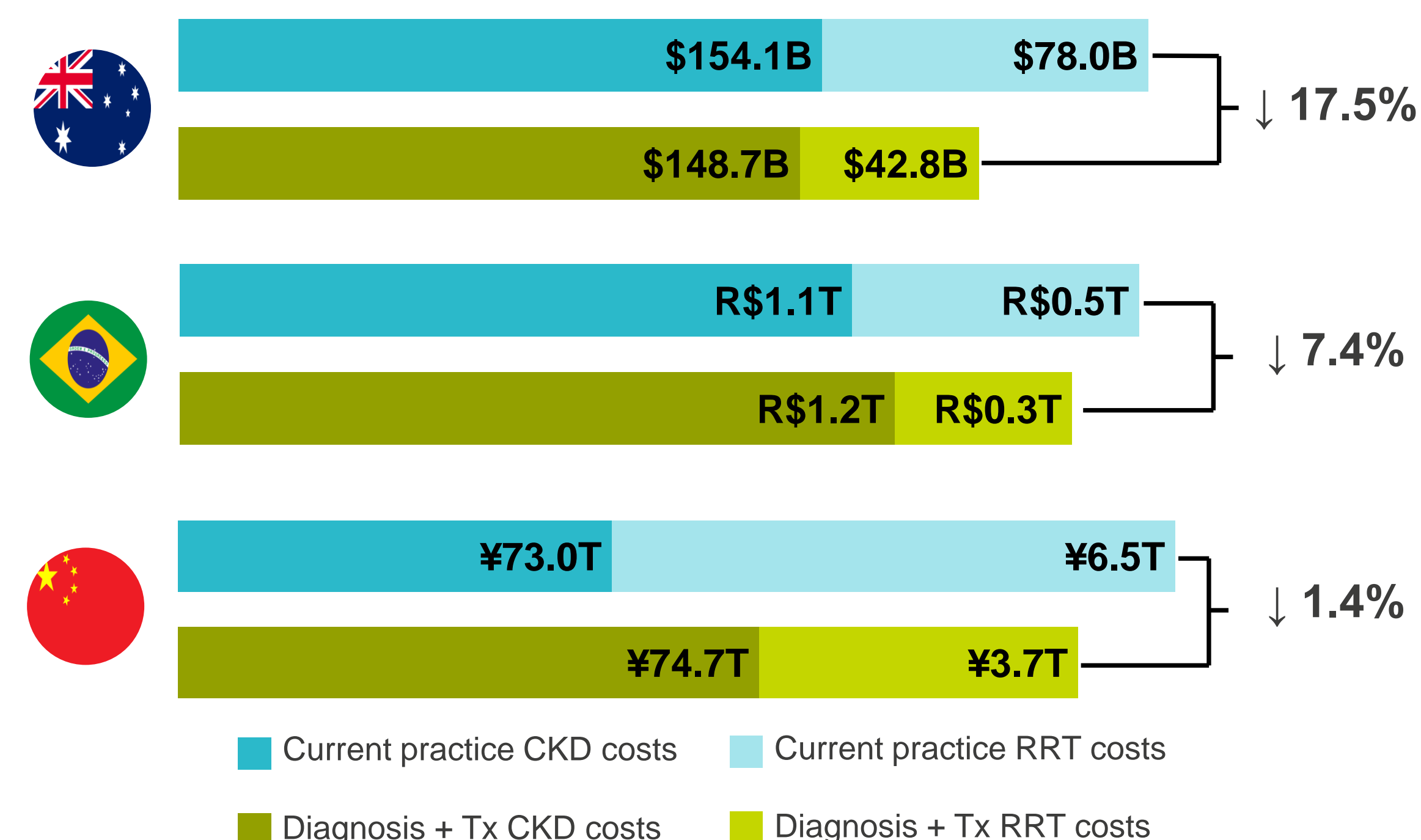
**Table 1. Comparison of current therapy use rates for patients with CKD, and 75% of target therapy use for eligible patients based on guideline recommendations**

Intervention	Comorbidity	Status of Use <sup>a</sup>	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
RAS <sup>b</sup> (ACEi or ARB)	HTN	Current use <sup>1</sup>	55.9%	55.9%	55.9%	55.9%	55.9%
		Target use <sup>2,3</sup>	75.0%	75.0%	75.0%	75.0%	75.0%
MRA	HTN	Current use <sup>4</sup>	10.0%	10.0%	8.0%	5.0%	5.0%
		Target use <sup>5,6</sup>	11.8%	14.5%	20.0%	12.8%	5.0%
SGLT-2i	Diabetes	Current use <sup>7</sup>	18.2%	18.4%	15.5%	6.6%	6.4%
		Target use <sup>6,8</sup>	67.5%	67.5%	67.5%	49.5%	6.4%
	No diabetes	Current use <sup>8,9</sup>	10.0%	10.0%	10.0%	6.6%	6.4%
		Target use <sup>6,8</sup>	67.5%	67.5%	67.5%	49.5%	6.4%
GLP-1ra	Diabetes	Current use <sup>10</sup>	6.1%	4.2%	3.0%	2.4%	2.6%
		Target use <sup>5,10,11</sup>	6.1%	4.2%	3.0%	25.5%	2.6%
Lifestyle (Exercise)	Any	Current use <sup>12</sup>	34.0%	34.0%	17.0%	11.0%	11.0%
		Target use <sup>13</sup>	67.5%	67.5%	67.5%	67.5%	67.5%
Statins	Any	Current use <sup>14</sup>	24.1%	24.1%	45.1%	53.0%	53.0%
		Target use <sup>15</sup>	66.0%	66.0%	66.0%	66.0%	66.0%

<sup>a</sup>Target use was defined as 75% of guideline-directed use.  
<sup>b</sup>Due to a lack of stage-specific usage data, the same current use was assumed across all stages.

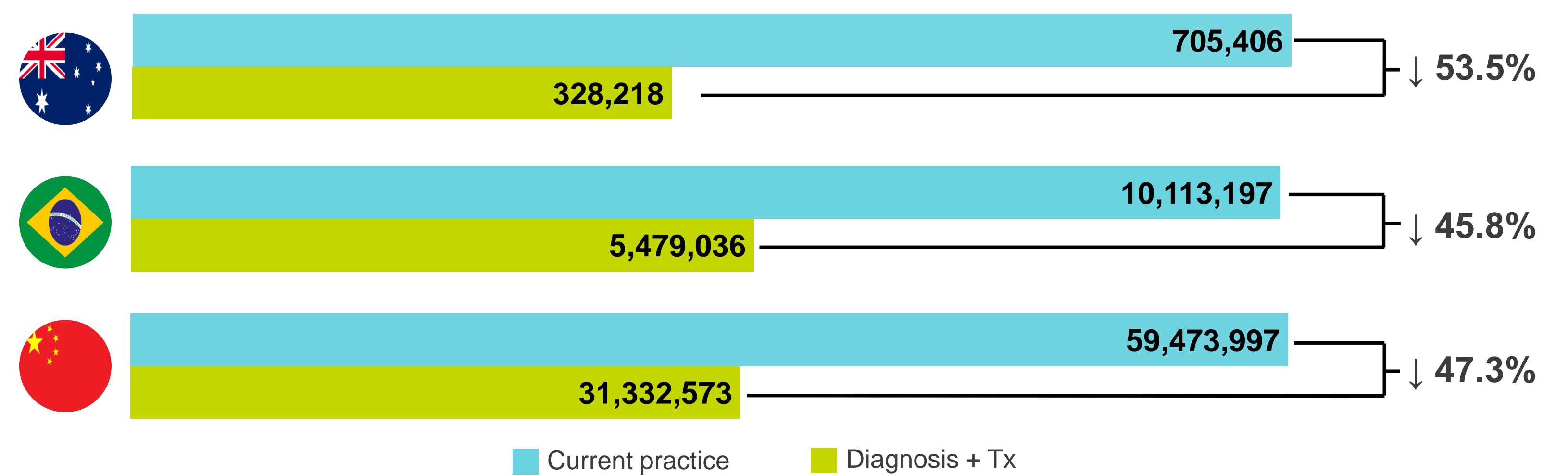
## Results – Economic

**Figure 1. RRT costs are projected to decrease by 39-45% by 2047 with improved diagnosis and GDMT adherence, with total costs decreasing by 1-17%**

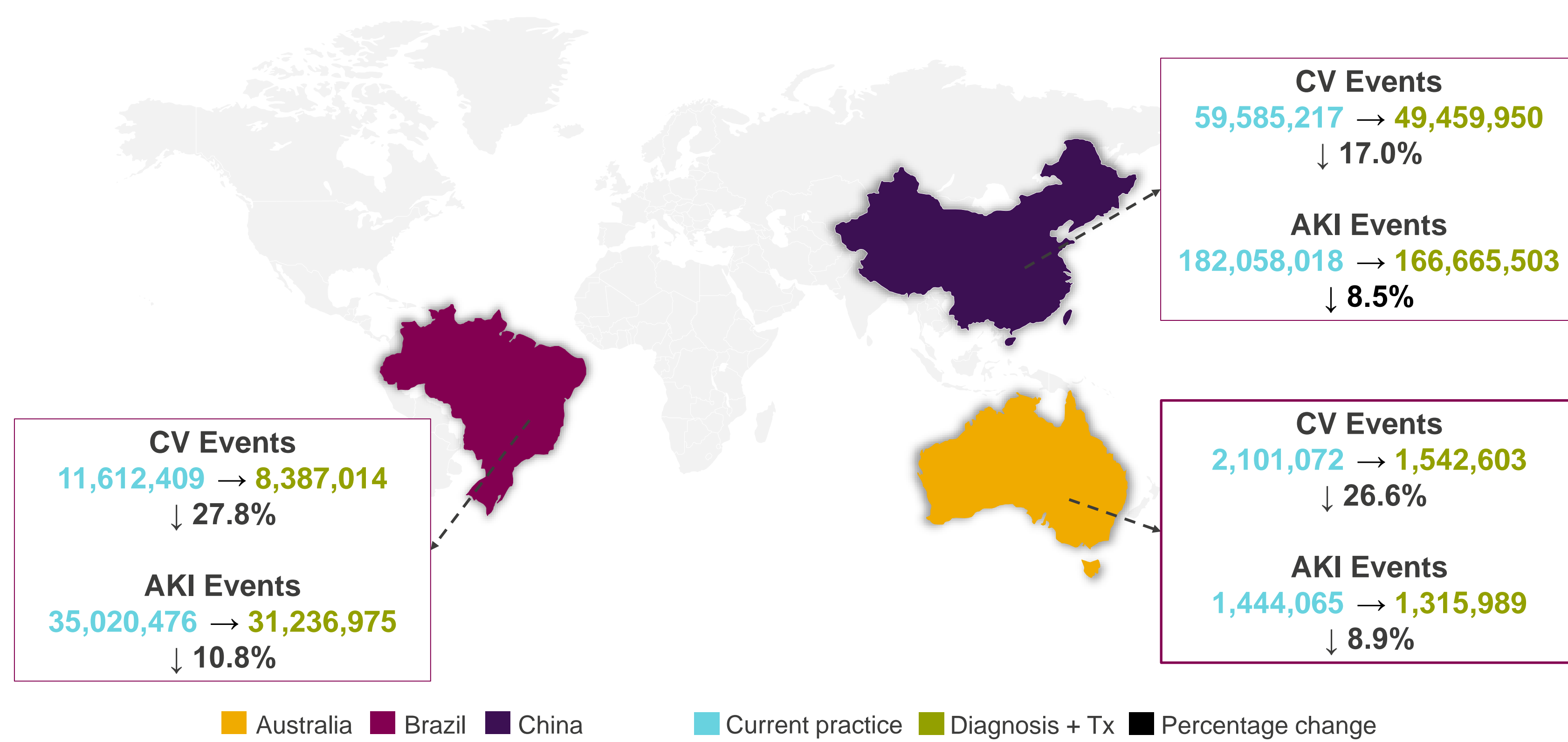


## Results – Clinical

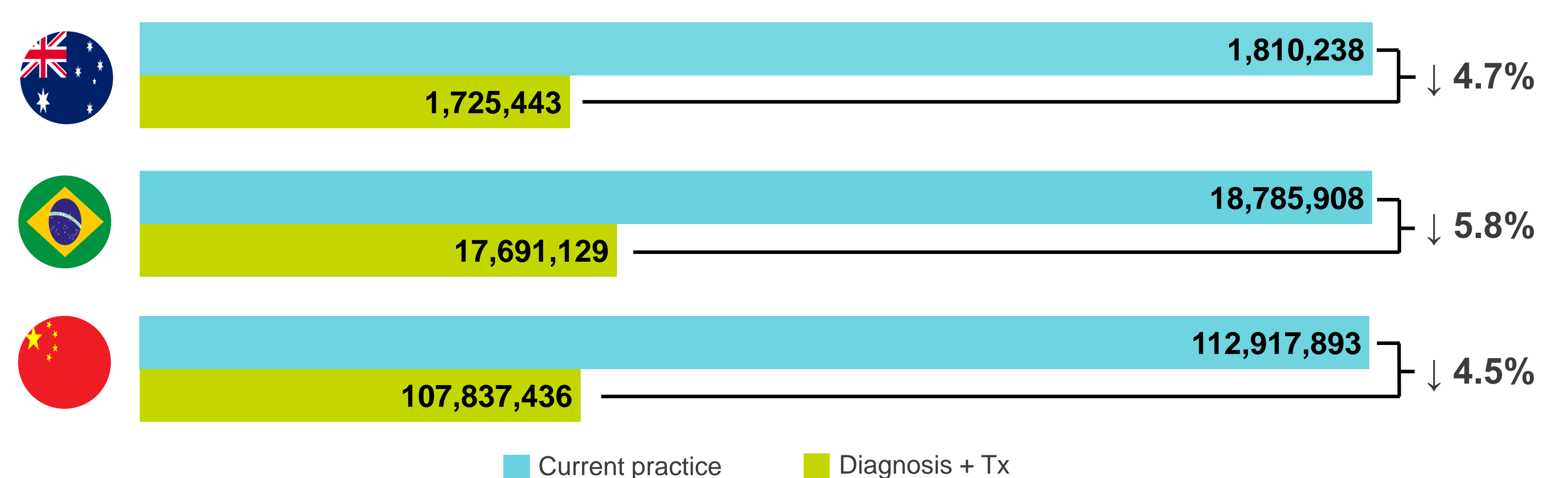
**Figure 2. Dialysis (cumulative prevalent patient years) is projected to decrease by over 45% across three countries with improved diagnosis and GDMT adherence compared to current practice over 25 years**



**Figure 3. Cumulative CV and AKI events are projected to decrease across three countries following improved diagnosis and GDMT adherence compared to current practice over 25 years**



**Figure 4. More than 6M fewer cumulative deaths are projected across the three countries over 25 years with improved diagnosis and GDMT adherence compared to current practice**



## Results – Societal

**Table 2. Improved diagnosis and GDMT adherence will result in incrementally greater net workdays, GDP, FTEs, and tax revenue among employed patients and caregivers.**

	Net workdays due to:			Net GDP	Net FTEs	Net tax revenue
	Patient absenteeism	Patient presenteeism	Caregiver absenteeism			
Australia	↑ 38.0M (3.2%)	↑ 33.0M (3.2%)	↑ 54.4M (2.9%)	↑ 57.4B (3.3%)	↑ 375.3K (3.1%)	↑ \$3.3B (3.0%)
Brazil	↑ 1.7B (8.0%)	↑ 1.5B (7.8%)	↑ 1.9B (7.7%)	↑ 2.8T (8.0%)	↑ 10.5M (7.8%)	↑ R\$159.7B (7.8%)
China	↑ 2.6B (4.1%)	↑ 2.2B (4.0%)	↑ 3.4B (3.7%)	↑ 3.9T (4.2%)	↑ 23.6M (3.9%)	↑ ¥467.2B (3.8%)

## References

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## Abbreviations

ACEi = angiotensin-converting enzyme inhibitor; AKI = acute kidney injury; ARB = angiotensin 2 receptor blockers; B = billion; CKD = chronic kidney disease; CV = cardiovascular; FTE = full-time equivalent; GDMT = guideline-directed medical therapies; GDP = gross domestic product; GLP-1ra = glucagon-like peptide 1 receptor agonist; M = million; MRA = mineralocorticoid receptor antagonist; RASi = renin-angiotensin system inhibitor; RRT = renal replacement therapy; SGLT-2i = sodium glucose transport protein 2 inhibitor; T = trillion; Tx = therapy.