IMPLEMENTATION OF A NATIONAL VALUE-BASED UNIFIED DRUG FORMULARY IN THE SAUDI PRIVATE HEALTH SECTOR





S. ALGHAMDI¹, A. ALJEDAI², I. ALJUFFALI³, M. ALJUMAH⁴, M. BECHWATI⁵, R. SABBAGH⁶, N. ALAGIL⁷

¹Secretary General, Council of Health Insurance, Riyadh, Kingdom of Saudi Arabia, ²Deputyship of Therapeutic Affairs, Ministry of Health, Riyadh, Kingdom of Saudi Arabia ³Senior Advisor, Council of Health Insurance, Riyadh, Kingdom of Saudi Arabia, ⁴Prof. Neurology, Itkan consulting Group, Riyadh, Kingdom of Saudi Arabia, ⁵Real World Evidence Manager, CCHO FZ LLC, Dubai, United Arab Emirates, ⁶R&D & Quality Director, CCHO FZ LLC, Dubai, United Arab Emirates, ⁷Senior Advisor, Council of Health Insurance, King Fahed Road Kingdom of Saudi Arabia

INTRODUCTION

Health Arabia's Council of Saudi (CHI) oversees service Insurance in the private sector, providers the National Platform for manages and Insurance Exchange Health (NPHIES) program, and Service identifies insurance beneficiaries. CHI established a national unified drug formulary (VBF) to value-based standardize practices and assure health equity.

METHOD

The established governance comprised of a process, policies, and standard operating procedures described the dynamic engagement of four multilayered committees. This ensured multisectoral stakeholder representation, informed decision-making, and accountability

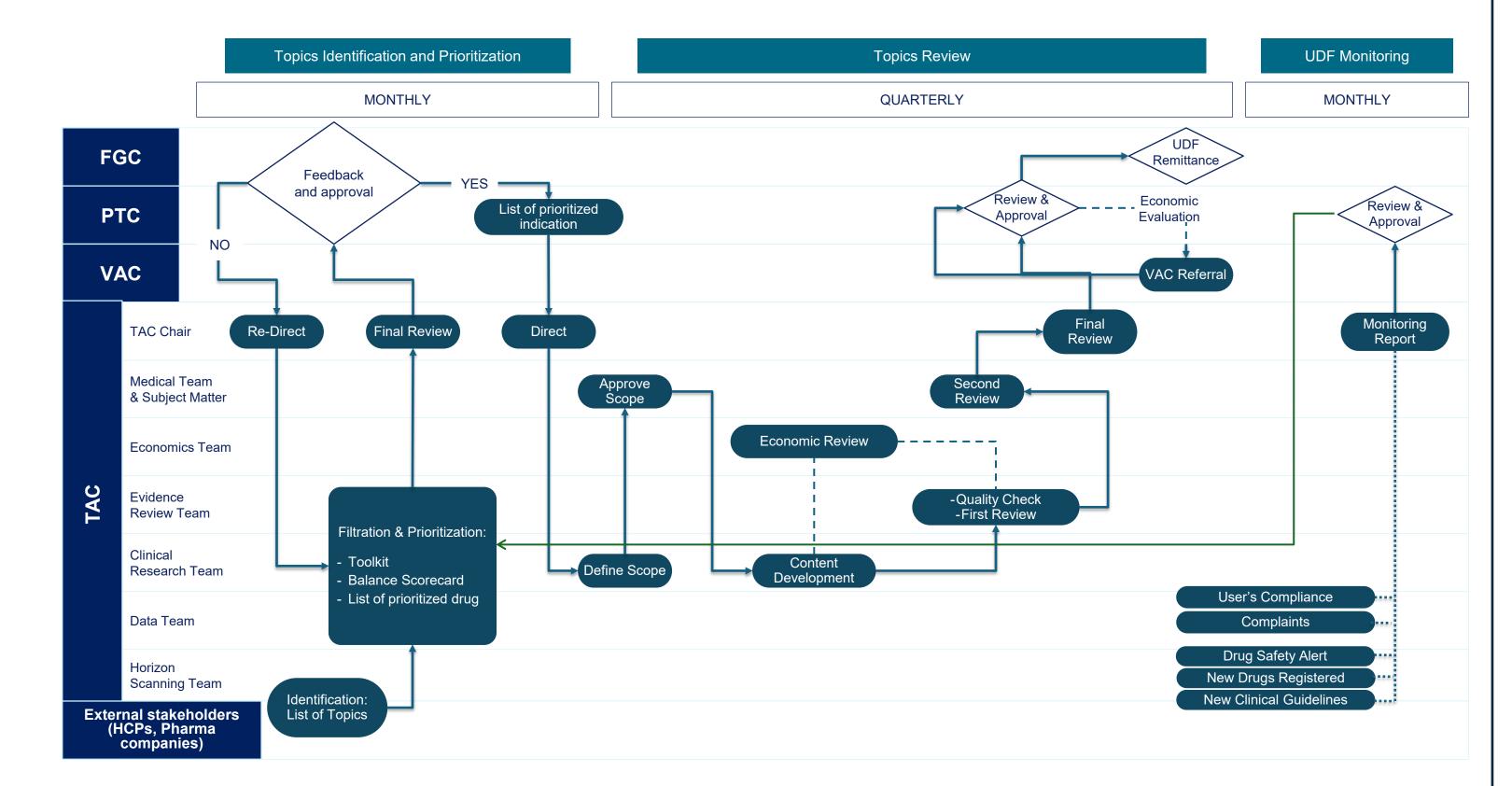


Figure 1. UDF Maintenance & Monitoring Process

OBJECTIVES

The objectives of this article are to describe (1) the governance framework, a key component of VBF, and (2) the first year's implementation results.

supporting evidence-based review and rational use of medicines.

The process described two workstreams: Topics Review and Continuous Monitoring. The former indication identification entailed and prioritization, review of clinical and economic guidelines, and final review and approval of the outcome. The latter was informed by horizon scanning of newly registered drugs and published guidelines, pharmacovigilance, formulary complaints from stakeholders, drug utilization trend, and user's adherence.

RESULTS

Committees effectively encompass а comprehensive spectrum of stakeholders.

This diverse representation underscores the commitment to inclusivity and collaboration among key entities, fostering a well-rounded and balanced perspective in the formulary decision-making process.

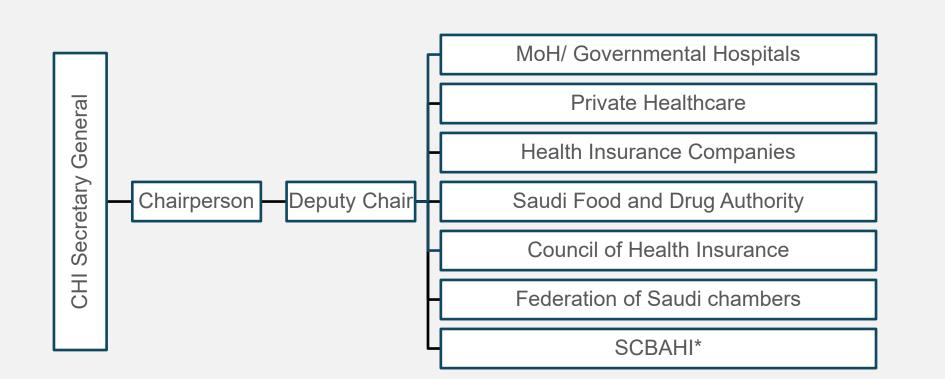


Figure 2. Formulary Governance Committee (FGC) Charter



Figure 4. Committee Attendance Rates

21%

79%

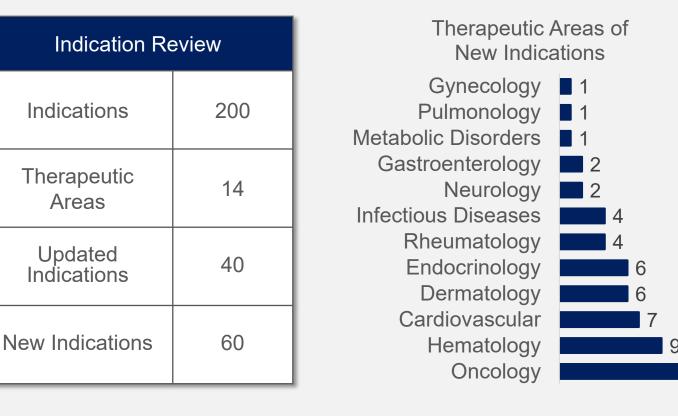
PTC



Non-Attendance

200 indications across 14 therapeutic areas were reviewed resulting in the following drug-indication pairs adjustments: 5700+ drug additions to relevant indications, 3300+ prescribing edits modifications, and 380+ delisting's. Twelve monitoring reports described spending and utilization as per the prescribing edits, generics/biosimilars uptake, and specialty drugs prescribing patterns.

Figure 5. Indications Review Reports & UDF Updates



Prescribing Edits							
EU (Emergency use only)	This drug status on formulary is only for emergency use.						
PE (Protocol Edit)	Use of drug is dependent on protocol combination, doses and sequence of therapy.						
ST (Step Therapy)	Coverage may depend on previous use of another drug.						
CU (Concurrent Use Edit)	Coverage may depend upon concurrent use of another drug.						
Gender	Coverage may depend on patient gender.						
Age	Coverage may depend on patient age.						
MD (Physician Specialty)	Coverage may depend on prescribing physician's specialty or board certification.						
QL (Quantity Limit)	Coverage may be limited to specific quantities per prescription and/or time period.						
PA (Prior Authorization)	Requires specific physician request process with specific dosage, duration of treatment, population, step therapy and concomitant treatment.						

 Table 1. CHI Prescribing Edit Tools

Figure 6. Combined Multivariate Criterion Results

	Combined Multivariate Criterion			C1	C2	C3	C4	C5	C6						
ank	Mahalanobis Distance of Inverse Normal Transforms (Van Der Waerden)	ICD-10	Description	Macro Cost (Million Volume					Medicati ons Cost	Median	age	% Inpatien t	mean LOS	number of claims	number of
1	5.721			22.3	1.5	2.48	17.0	1.88	76%		35	9.0%	0.6	3.7	41
2	5.589			43.8	1.6	4.61	17.5	1.84	40%		48	18.5%	1.0	5.7	60
3	5.3 <mark>9</mark> 2			23.6	0.2	17.29	8.5	6.19	36%		57	46.9%	3.4	0.8	56
4	5. <mark>222</mark>			14.3	0.1	18.36	5.6	7.20	39%		53	70.8%	2.8	0.4	57
5	4.981	- T	5 📄	112.6	15.0	1.26	21.7	0.24	19%		56	1.5%	4.2	18.2	20
6	4.926			29.1	0.2	30.42	3.6	3.77	12%		58	15.0%	17.6	0.2	22
7	4.817			142.5	4.3	5.48	12.9	0.50	9%		62	8.3%	10.6	8.5	33
8	3.995) Code	3.4	0.5	1.16	2.5	0.87	75%		41	0.2%	2.0	0.8	29
9	3.987			5.5	0.9	1.04	4.0	0.76	73%		38	0.0%	0.0	1.8	34
10	3.917			13.7	3.6	0.64	8.9	0.42	65%		11	0.4%	0.0	5.8	27
11	3.808	2	= 2	63.6	3.7	2.89	9.8	0.44	15%		30	21.4%	3.0	12.9	58
12	3.735			304.0	109.9	0.46	78.0	0.12	26%		52	0.1%	2.1	126.1	19
13	3.735	i i i i		8.6	0.1	11.57	1.6	2.20	19%		48	55.6%	1.5	0.4	58
14	3.728			504.8	166.2	0.51	156.2	0.16	31%		53	0.4%	3.6	222.3	22
15	3.705		2	3.2	0.1	3.86	1.6	2.00	52%		45	6.5%	3.8	0.4	44
16	3.612	-		5.3	0.2	3.87	2.2	1.64	42%		53	16.3%	2.3	0.5	35
17	3.593			3.8	0.2	3.56	1.8	1.72	48%		35	41.2%	0.2	0.5	48
18	3.467			5.6	0.4	2.33	2.5	1.02	44%		67	3.0%	1.4	1.4	57
19	3.452			14.7	0.4	5.64	2.8	1.09	19%		60	0.5%	17.0	1.5	57
20	3.435		-	2.5	0.2	1.94	1.5	1.17	60%		42	5.1%	1.7	0.5	36

Figure 7. Indication Score Card: Combined Value Criteria

Indication	Name and ICD 10 code		
Prioritized indica	ation	Rank	Value
Yes	Combined criterion (MD)*	11	3.808
	(*)Multivariate Mahalanobis distance of Inverse Normal Transfoms of the 6 Criteria	Denk	Deveentile

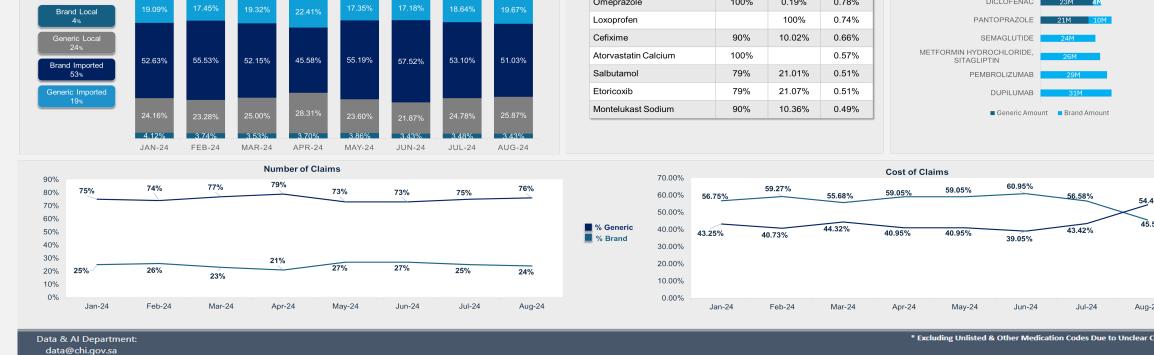
Figure 8. Monitoring Dashboard

محلس الخصي محلس الخصي Council of Health Insurance	Medi (2024)	catior	n Utili:	zatior	وية - ١	لاك الأد	استهلا							Detailed View
C	of Medicat Claims 45M	ion C	ost of Meo Claim 3.36 b	าร				Iumber of Other 11M % from total: 2	Other Medication Cla Other Unliste 5M 26% % from total: 8	d			Cost of Other M Other 747.68M % from total: 27%	edication Claims Other Unlisted 686.46M % from total: 16%
23%									Top 20 Prescribed Me	edication (Ge	eneric Vs Br	and)	TOP DIAGNOSIS E	Y NUMBER OF PRESCRIBED MEDS
20 /				26	5%			24.47%	Scientific name	% generic count	% brand count	% from all	Acute upper respiratory infe unspecified	ection, 5.68
2019			2	2023			2024		Paracetamol	99%	1.16%	6.07%	Acute nasopharyngitis (commor	a cold) 2.82%
2010									Diclofenac	83%	16.87%	2.92%	Essential (primary) hyperte	ension 2.44%
			74%			75.5	3%		Amoxicillin, Clavulanic Acid	86%	13.69%	2.43%	Type 2 diabetes m	ellitus 2.30%
		Generic							Sodium chloride	100%		1.85%	Pain, unsp	
		Brand							Pantoprazole	75%	25.26%	1.28%	Acute phar	
		N	IUMBER OI	F CLAIMS	LOCAL VS	S IMPORTE	D		Xylometazoline Hydrochloride	71%	29.12%	1.2%	Acute to	
									Hyoscine Butylbromide	83%	17.19%	1.12%	Gastroenteritis and colitis, unsp	
Brand Local									Metronidazole	98%	1.63%	1.04%	Fever, unsp Acute pharyngitis, unsp	
4%	35.21%	33.73%	36.03%	37.89%	33.03%	34.06%	35.26%	36.01%	Azithromycin	91%	9.45%	0.97%	Allergic rhinitis, unsp	
Generic Local 40%									Desloratadine	83%	17.09%	0.94%	vilorgio minuo, unop	
Brand Imported	21.73%	22.34%	20.53%	18.35%	23.51%	23.93%	22.03%	21.50%	Loratadine	97%	3.31%	0.93%		
23%									Ceftriaxone	100%		0.90%	TOP COST DRIVERS B	Y PHARMACEUTICALS SPENDING
Generic Imported 34%	39.69%	40.61%	40.53%	41.03%	40.00%	38.83%	39.82%	39.68%	Dexamethasone Sodium Phosphate	100%		0.88%	(GEN	ERIC VS. BRAND) EDICATIONS AMOUNT: 15%
									Ibuprofen	62%	37.6%	0.86%	AMOXICILLIN, CLAVULANIC	ACID 47M 10M
	3.36% JAN-24	3.32% FEB-24	2.91% MAR-24	2.73% APR-24	3.46% MAY-24	3.18% JUN-24	2.89% JUL-24	2.81% AUG-24	Ondansetron	99%	0.77%	0.82%	PARACETA	MOL 35M
									Mometasone Furoate	80%	20.25%	0.81%	CEFTRIAX	ONE 28M
			COST OF	CLAIMS L	OCAL VS I	MPORTED			Colecalciferol	78%	22.19%	0.79%	ROSUVAST	ATIN 24M
	19.09%	17.45%	10.00%		17.35%	17.18%	18.64%	19.67%	Omeprazole	100%	0.19%	0.78%	DICLOFE	NAC 23M 4M
Brand Local	19.09%	17.45%	19.32%	22.41%	17.55%	17.10%	10.04%	19.67%	Loxoprofen		100%	0.74%	PANTOPRA	

Two dynamic analytical tools were developed, validated, and approved for future applications; the Prioritization Toolkit and Monitoring Dashboard. The Toolkit employs advanced to systematically algorithms prioritize indications for review based on detailed financial and clinical metrics derived from stakeholders' value criteria. The metricsrelated real-world data was extracted from NPHIES. The centralized Dashboard enables

continuous	moni	toring	as	well	as	trends	
identification	of	drug	usa	ige,	costs	s, and	
adherence.							

					Nalin	reicentile
C1	Macro Cost		SAR 63,623,443		38	97%
C2	Volume of Patients		3,681		232	87%
C3	Macro Cost PMPM		SAR 2,889		250	86%
C4	Medications Cost		SAR 9,766,368		31	98%
C5	Medications Cost PMPM		SAR 443		148	91%
C6	Medications Cost / Macro	cost	15%		584	68%
					Rank	Value
C7	MSRR(**)				126	25.9%
	(**) Medication-Specific Rej	iection Rate				
				Class	Rank	Value
	PR score (***)			Α	27	0.99
	(***) Priority Review score (befor	re LTA assessi	ment)	Expedited		
	Median age (IQR)	30.1 [21	.9 - 36.8]			
	Proportion inpatient	21	%			
	LOS (m ± sd)	3 ±	2.6			
	Claims	128	367			



CONCLUSIONS

governance framework successfully supported **I**his national-level health innovation uptake while optimizing expenditure. Its regular update is essential for VBF maintenance.

CONTACT INFORMATION

Nada Ahmed Alagil, Senior Advisor, Council of Health Insurance, King Fahed Road P.O.

Box 94764, Riyadh 11614 Kingdom of Saudi Arabia. Email address: nalagil@chi.gov.sa

ACKNOWLEDGMENT

A special acknowledgment to key contributors: Dr. Christiane Maskineh,

Dr. Mirna Matni, Dr. Youmna Bassil, Dr. Chana Saad

REFERENCES

- 1. Council of Cooperative Health Insurance. Insurance Drug Formulary Project policy Operational Framework. 2023.
- 2. Ciccarello C, Leber MB, Leonard MC, Nesbit T, Petrovskis MG, Pherson E, et al. ASHP Guidelines on the Pharmacy and Therapeutics Committee and the Formulary System. American Journal of Health-System Pharmacy. 2021 May 15;78(10):907-18.
- 3. National Institute for Health and Clinical Excellence. The development and updating of local formularies: Draft for consultation [Internet]. 2012 [cited 2024 Oct 11]. Available from:

https://www.nice.org.uk/guidance/mpg1/documents/the-development-and-updating-of-local-formularies-draftquidance-consultation3

4. Academy of Managed Care Pharmacy. Formulary Management [Internet]. 2009. Available from: http://www.amcp.org/amcp.ark?pl=AB3C79C7