MINISTRY OF HEALTH AND SOCIAL SERVICES

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RE: INVITATION FOR EXPRESSION OF INTEREST FOR AEPC FELLOWS TO ROTATE IN PAEDIATRIC AND CONGENITAL CARDIOLOGY IN NAMIBIA

The above subject bears reference.

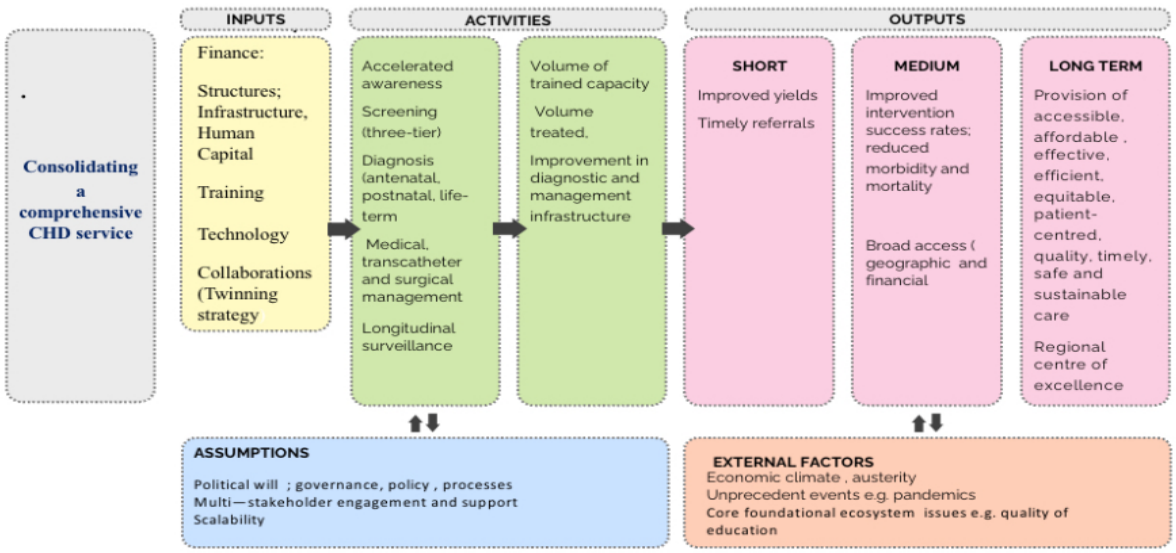
Mission

Our mission is to provide accessible, affordable, effective, efficient, equitable, patient-centered, quality, timely, safe and sustainable care to all Namibians, irrespective of socio-economic condition.

We adhere to the ethical and inception principles as summarised in the logic model *appendix 1.* below, to ensure universal coverage.

Appendix.1

LOGIC MODEL FOR THE PURPOSE OF DESIGN AND CONDUCT OF CONGENITAL HEART SERVICE IN NAMIBIA



Our developing paediatric and congenital heart service will provide a unique learning experience in a different healthcare setting. The envisaged period will be 2-3 months, extendable to 6 months as is feasible, from January 2025. This exchange will allow for building on the clinical currency and understanding of CHD, as per the aggregated AEPC and College of Paediatric Cardiology of the College of Medicine of South Africa training guidelines, and logbooks' requirements. There shall be great opportunities for research intended at derived contextual-tailored solutions, equally. We are currently doing genomics for CHD novel variants as part of the PROTEA project, and have participated in the AFROSTREP study aimed at studying Streptococcus genes with the intent of establishing the vaccine for Acute Rheumatic Fever, which is highly prevalent in Namibia. Additionally, we deem this to be a critical opportunity to contribute to the capacity-building efforts within the Namibia's healthcare system, and indeed foster enduring collaboration in the long time. The programme has received endorsement from the Ministry of Health and Social Services, covering assistance with the authorisation to practise (in collaboration with the Health Professional Council of Namibia), work permit, accomodation, occupational safety, as well as medico-legal liability.

Demographics

Section 1.

Windhoek Central Hospital serves as the sole national referral centre, serving > 90% of the public (uninsured quota), and the only service providing CHD surgery in Namibia. There are merits for centralisation, the universal guideline being 1 centre for every 2.5 – 3 million people, to allow for sustainable capacity building (skilled human infrastructure).

Appendix.2

REGION	ABSOLUTE HEAD COUNTS	%
Erongo	240 206	7.9
Hardap	106 680	3.5
Kavango West	123 266	4.0
Kavango East	218 421	7.2
//Kharas	109 893	3.6
Khomas	494 605	16.3
Kunene	120 762	4.0
Ohangwena	337 729	11.2
Omaheke	102 881	3.4
Omusati	316 671	10.5
Oshana	230 801	7.6
Oshikoto	257 302	8.5
Otjozondjupa	220 811	7.3
Zambezi 142 373	142 373	4.7
TOTAL	3 022 401	100%
AGE DISTRIBUTION (YEARS)	%	
0-14	37.0	
15-34	34.1	
35-59	22.1	
+60	6.8	

Namibia Statistics Agency, 2023

Appendix.3

For this description, *appendix 2, 3* above to highlight all the regions of drainage, and particularly the highly afflicted areas marked with red asterisks
We are in the process of drawing up a DICE model to estimate the true prevalence and incidence of CHD in Namibia, to feed the ratioing process for resources allocation.
While we emphasise 'centralisation', we do acknowledge that the regions need to be empowered with skills infrastructure and point of care tools for early detection,
it was thus an obligation to stratify prevalence and/or allocate regional distribution for CHD, as shown in *appendix. 4,* below.

REGION	ABSOLUTE GENERAL POPULATION COUNT	%	CATCHMENT AREA CHD ESTIMATED PREVALENCE FROM CAPTURED ENTRIES %
Erongo	240 206	7.9	9.2
Hardap	106 680	3.5	4.1
Kavango West	123 266	4.0	
Kavango East	218 421	7.2	13.8
//Kharas	109 893	3.6	3.3
Khomas	494 605	16.3	36.8
Kunene	120 762	4.0	1.2
Ohangwena	337 729	11.2	3.3
Omaheke	102 881	3.4	2.4
Omusati	316 671	10.5	2.5
Oshana	230 801	7.6	8.9
Oshikoto	257 302	8.5	2.8
Otjozondjupa	220 811	7.3	5.0
Zambezi	142 373	4.7	3.1
TOTAL	**3 022 401**	**100%**	

Comments

- Estimands derived not representative of whole population; living registry

- Incidence and prevalence; linear regression modelling using numbers, time frame , catchment area et al with sensitivity analysis

Prevalence = almost linear exponential relationship with population density. Endpoint determine numerator per 1000 births
=> 1 in 100 global estimate

Formulate policy, ration resources' allocation

Appendix. 4

Section 2.

This section refers to number estimates reviewed on weeks, and cumulatively, the sums would equate to figures per annum for some items e.g. figures entered per week, as shown in *appendix. 5, below.* There is broad heterogeneity and complexity across the CHD spectra in Namibia. Not accounted for in this table are the inpatient admissions to the heart unit at Windhoek Central hospital (up to 150/ annum), accounting for general medical cardiac conditions, surgical (newborn to adults with CHD) and thoracic paediatric patients. We conclude that the incidence and prevalence is much higher relative to the overall global prevalence estimated to be I in a 100.

EPIDEMIOLOGY (PROTEA FILEMAKERPRO REGISTRY)

Entry	Frequency	Comment
Foeto-maternal diagnosis	1-2/week	Only referrals are captured
New diagnoses per week	20/ week	Referral centre
Scheduled outpatient visits	60-70/week	New and follow-up, CHD + ARF/RHD (<18 years old); 348 Jan- April 2024 range 1500- 1800 per given year.
Specialty referrals (Neonatology, ENT, surgery, Neurosurgery et al)	10/week	Routine screening syndromes/associations
Scheduled outreach	150- 200/visit	1-2 per annum, new and follow-up. Medipark – urgent referrals, 1 clinic per week
Surgery waiting list	500	Majority advanced disease, complex and/or time-sensitive lesions
Transcatheter waiting list	200	Definitive > palliative and/or staged procedures
Average waiting time	> 1-2 years	Excludes emergencies and/or time-sensitive lesions
Established pulmonary obstructive vascular obstructive disease in the waiting list	> 50	Cumulative 2019- 2023
Death in the waiting list	> 100	Cumulative 2019- 2023
		Follow-up adherence > 95%!

Estimated prevalence of GUCH/ adult CHD (< 18 years old) 10%; New, long-term surveillance +/- awaiting revision and /or repeat interventions

High prevalence of syndromes and associations ; estimated > 10% prevalence in the 0-12 years old CHD cohort and others, VACTERL commonest association in Namibia

Estimated concomitant CHD and ARF/RHD; > 5%

Genomics for novel CHD variants as composite of the PROTEA project; contribute to the Africa genomic data bank

Appendix. 5

Should there be interest across the AEPC community, we do look forward to your communication.

Your faithfully,

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The Namibia National Children Hearts Trust