

HHP Care Model and Disease Management Webinar Series

Chronic Kidney Disease (CKD) #1

Thursday, January 28, 2021

5:30pm – 6:30pm

**HAWAI'I
PACIFIC
HEALTH**

HAWAI'I
HEALTH
PARTNERS



Moderator – 01/28/21

Andy Lee, MD

Medical Director, *Hawai'i Health Partners*
Chief of Staff, *Pali Momi Medical Center*
Hawai'i Pacific Health

**HAWAI'I
PACIFIC
HEALTH**

HAWAI'I
HEALTH
PARTNERS

Disclaimer:

- The following is intended as information resource only for HHP/HPH providers, clinicians, administrative and clinical leaders.
- Specific areas may not pertain directly to your clinical practice area and/or may not be applicable to your practice based on your existing workflows, infrastructure, software (e.g. EHR), and communications processes.

Webinar Information

- You have been automatically muted. You cannot unmute yourself.
- You will be able to submit questions via the Q&A section.
 - Due to time constraints, any unanswered questions will be addressed this week and posted on the HHP website
- A recording of the meeting will be available tomorrow on the HHP website and intranet.

How to Claim CME Credit

1. Step 1: Confirm your attendance

- You should have completed a brief questionnaire before joining today's live webinar.

2. Step 2: HPH CME team will email you instructions

- Complete and submit evaluation survey that will be emailed to you within one week of the offering.
- Your CE certificate will be immediately available to you upon completion of your evaluation.
- Questions? Email hphcontinuingeduc@hawaiiipacifichealth.org

CME Accreditation Statement

- In support of improving patient care, Hawai'i Pacific Health is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.
- Hawai'i Pacific Health designates this webinar activity for a maximum of AMA PRA Category 1 Credit (s)™ 1.0 for physicians. This activity is assigned 1.0 contact hour for attendance at the entire CE session.



JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

Disclosures

- Except as noted below, the planners and presenters of this activity report no relationships with companies whose products or services (may) pertain to the subject matter of this meeting, :
 - Dr. Rick Hayashi (Hawai'i Kidney Specialists)

HHP Care Model and Disease Management Webinar Series

- **Purpose and Goals:**
 - To promote integration across the network
 - To increase awareness of network expertise
 - To standardize best practices addressing clinical effectiveness, efficiency, appropriateness and patient experience
 - To improve population level outcomes and the overall performance
 - Billed as a conversation: the set-up is a dyad presentation by a Primary Care Physician and Specialist on a clinical topic of interest
- **Occurrence:**
 - 2nd and last Thursday of the month from 5:30—6:30 pm

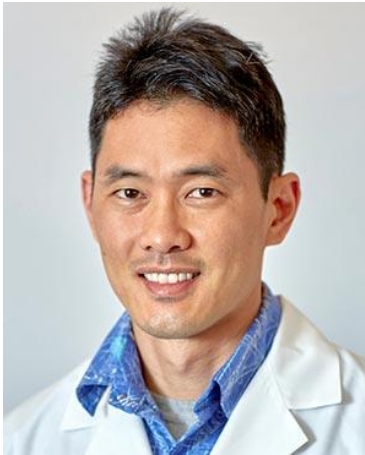
QPP/SSP: Attendance at HHP Webinars

- QPP & SSP
 - 0.5 Point = attended ≥ 10 live webinars
 - 1 Point = attended ≥ 15 live webinars
- Providers must register via the pre-survey form and attend at least 10 live webinars in 2021
- Credit will **not** be given for watching the recording

Date	Topic/Speaker
1/28	Chronic Kidney Disease (CKD) #1: <i>Dr. Rick Hayashi & Dr. Marti Taba</i>
2/11	Wound Care: <i>Dr. Mike Shin</i>
2/25	Peds Neurology - Headache: <i>Dr. Keith Abe</i>
3/11	Congestive Heart Failure (CHF) #1: <i>Dr. Carol Lai & Dr. Rajive Zachariah</i>
3/25	SPRING BREAK
4/8	Chronic Kidney Disease (CKD)#2
4/29	Congestive Heart Failure (CHF) #2
5/13	Opioids - Acute
5/27	Peds Nephrology: Hematuria
6/10	Dementia
6/24	Chronic Kidney Disease (CKD) #3

Date	Topic/Speaker
7/8	Congestive Heart Failure (CHF) #3
7/29	Hospital at Home/Home Visits
8/12	Diabetes Mellitus
8/26	Dermatology: Skin Cancer
9/9	Opioids - Chronic
9/30	Diabetic Foot
10/14	Hypertension
10/28	Chronic Kidney Disease (CKD) #4
11/11	Psychiatric Meds: Adult & Peds
11/25	THANKSGIVING
12/16	Congestive Heart Failure (CHF) #4
12/30	NEW YEAR'S EVE

Introduction to Chronic Kidney Disease



Rick Hayashi, MD

Nephrologist, Hawai'i Kidney Specialists
Assistant Clinical Professor of Medicine
– John A. Burns School of Medicine,
University of Hawaii



Marti Taba, MD

Primary Care Physician – Family Medicine,
Straub Kailua Family Health Center
Division Chief, Family Medicine
Hawai'i Pacific Health Medical Group

**HAWAI'I
PACIFIC
HEALTH**

**HAWAI'I
HEALTH
PARTNERS**

DOCTORS of DESTINY



(c) GiggleMed.com

DR. BEANS JUST ALWAYS
SEEMED TO KNOW THAT
NEPHROLOGY WAS HIS CALLING

Introduction to Chronic Kidney Disease (CKD)

- Epidemiology of CKD
- Identifying CKD
- Accurately assess kidney function and estimate risk for progression
- Determine cause of CKD
- Identify and manage secondary complications of CKD
- Take measures to slow down progression of CKD
- Prepare for renal replacement therapy

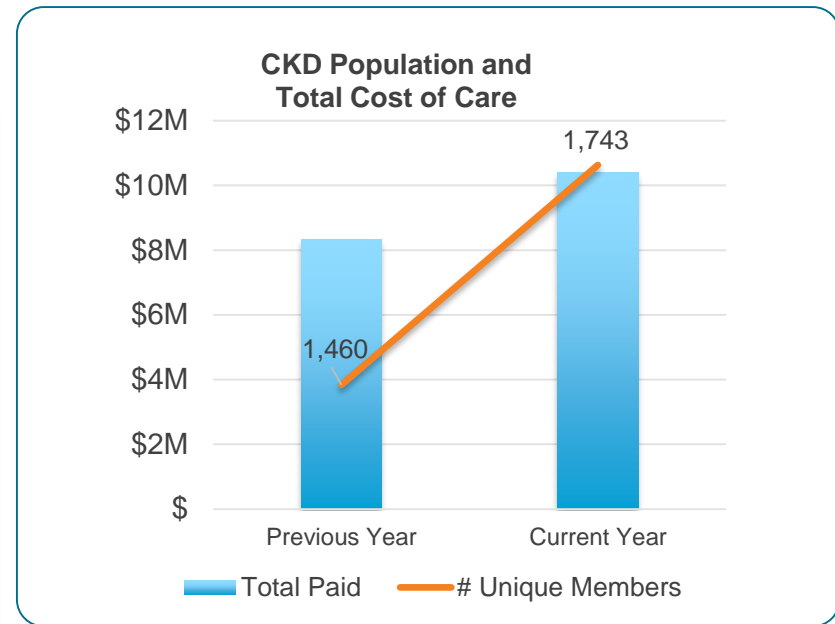
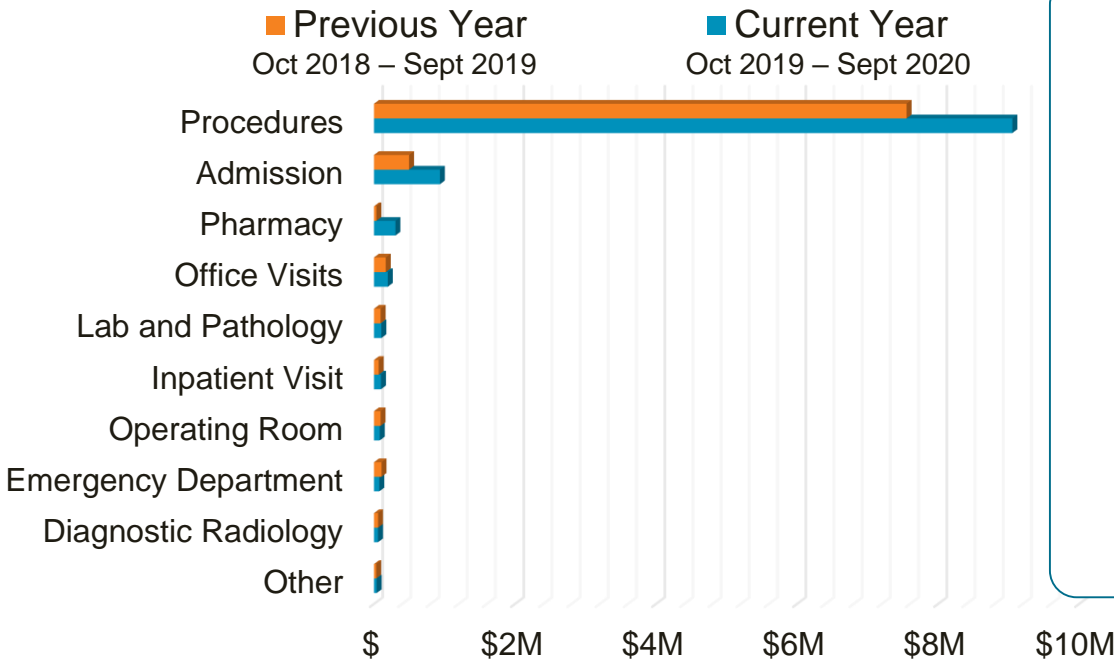
Epidemiology of CKD

- More than 1 in 7 (~15%) of adults have CKD 1-5 (>37 million in US)
- Native Hawaiian/Pacific Islander have the highest rate of ESRD in the US (2000 per million versus 250 per million in whites)
- 10 year survival is 1/2 that in patients with eGFR <60 versus >60mL/min
- 5 year mortality with ESRD is 50%
- 25 year old with ESRD has the same risk of death as general population of a 85 year olds

Centers for Disease Control and Prevention: Chronic Kidney Disease (CKD) Surveillance System – Tracking Kidney Disease in the United States. Website on CKD accessed on 01/28/21: <https://nccd.cdc.gov/ckd/>

Na'ai D, Raphael KL. CKD in Native Hawaiians and Pacific Islanders: Trouble in Paradise. *Clin J Am Soc Nephrol*. 2019;14(11):1661-1663. doi:10.2215/CJN.03260319

HHP: Chronic Kidney Disease Service Levels



	Current Year	Previous Year	Difference	% Change
Total Allowed	\$ 10,407,150	\$ 8,337,220	↑ \$2,069,930	24.83%
# Unique Members	1,743	1,460	↑ 283	19.38%
PMPM	\$8.01	\$6.93	↑ \$1.08	15.59%
Cost per episode	\$5,970.83	\$5,710.42	↑ \$260.41	4.56%
% of Membership	1.61%	1.46%	↑ 0.15%	10.55%

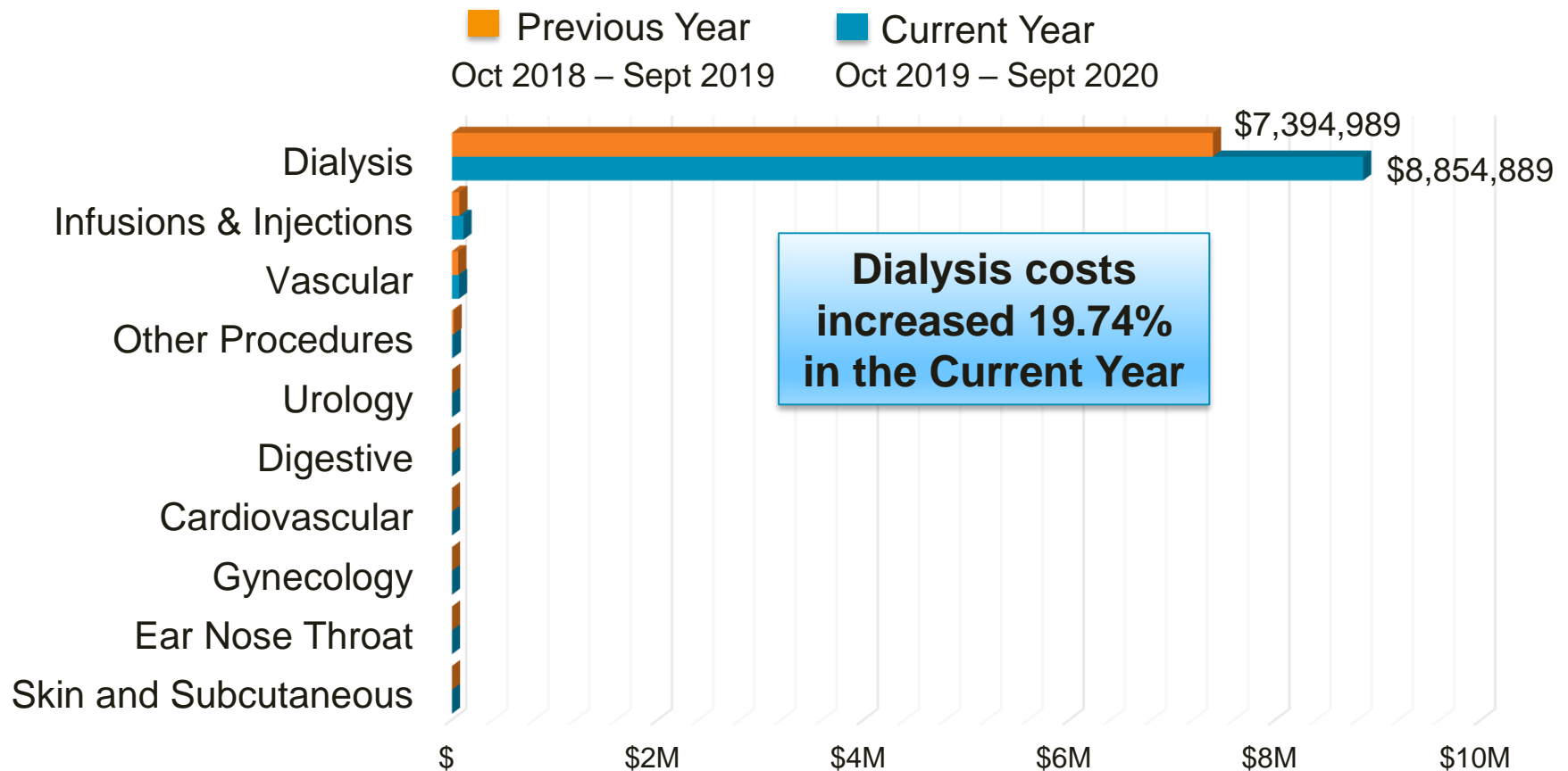
Source: HMSA commercial lives claims data up until September 2020.

CREATING A HEALTHIER HAWAII

**HAWAII
PACIFIC
HEALTH**

**HAWAII
HEALTH
PARTNERS**

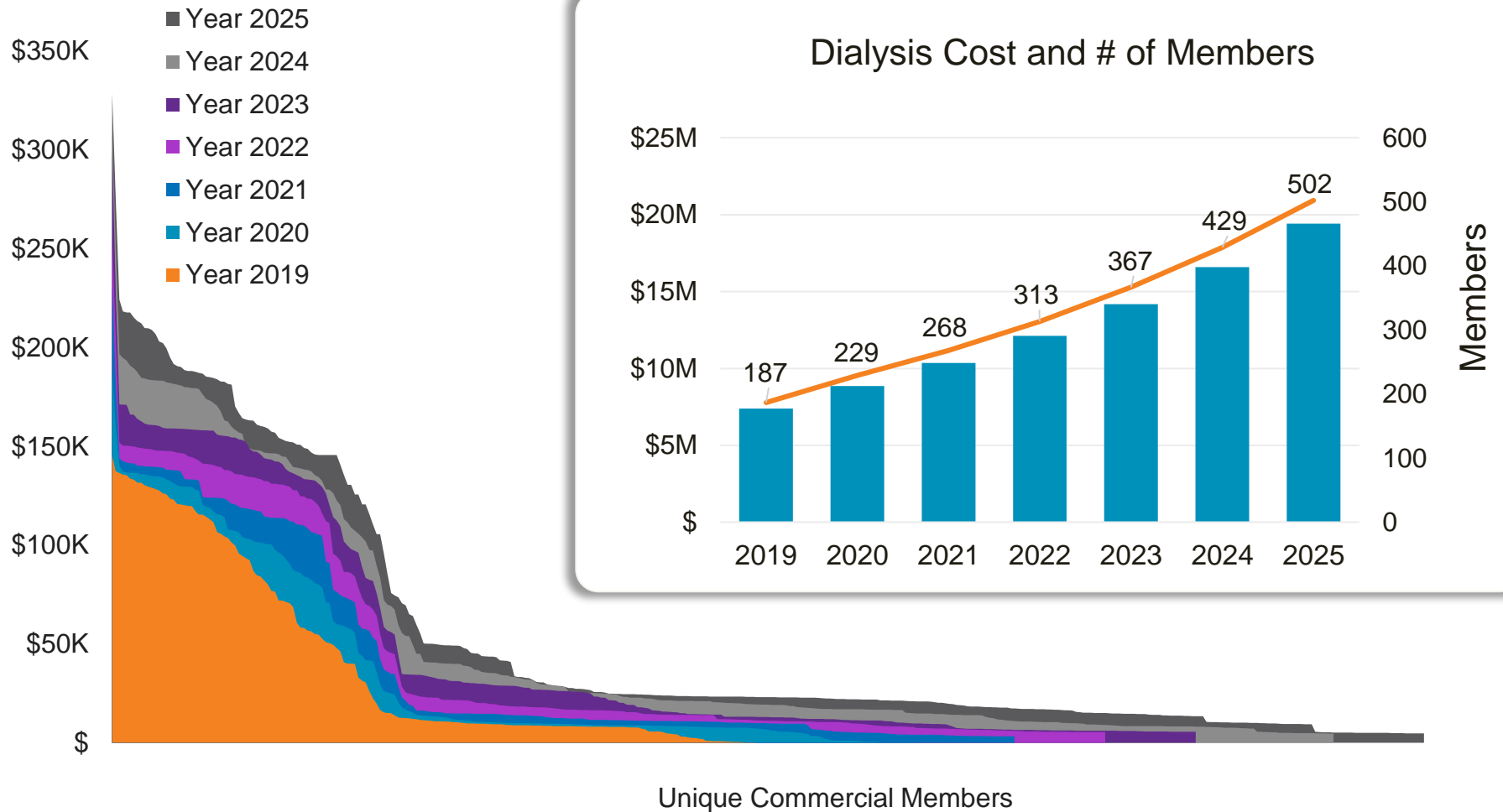
HHP: Chronic Kidney Disease Procedures



- **Dialysis is the highest costing procedure, accounting for 80% of the total cost of care for Chronic Kidney Disease**

Source: HMSA commercial lives claims data up until September 2020.

Dialysis Cost and Utilization – Estimated 5 Year Projection



Source: HMSA commercial lives claims data up until September 2020.

CREATING A HEALTHIER HAWAII

Presentations of Kidney Disease

- Asymptomatic elevation in serum Cr
- Symptoms related to renal disease (hypertension, edema, flank pain, uremia, oligo-anuria etc.)
- Proteinuria-> nephrotic syndrome
- Nephritic syndrome

Cr level is determined by muscle mass as well as Cr clearance



- Cr 1.5 = eGFR 130mL/min

Cr level is determined by muscle mass as well as Cr clearance



- Cr 1.5 = eGFR 30mL/min

Does the patient truly have CKD?



- 76 year old Asian male
- Kidney function varies Cr 1.1 (eGFR 65) to 1.6 (eGFR 41)
- Urine alb Cr ratio 350mg
- PMH: CHF LVEF 25%, HTN, DM2
- Kidney uz: Bilateral echogenicity, no hydro

Does the patient truly have CKD?



- 59 year old Caucasian woman
- Cr 1.10 (eGFR 51mL/min)
- 7 years earlier, Cr 0.90 (eGFR 66mL/min)
- UA no blood or protein
- No HTN or DM
- Kidneys normal appearing on ultrasound

Assessing glomerular filtration rate (GFR)

- Estimation equations (can underestimate kidney function)
 - MDRD equation
 - CKD EPI equation
- 24 hour urine (can overestimate kidney function)
 - Cr clearance
 - Urea clearance
- Cystatin C (recommend CKD EPI cystatin C Cr eGFR equation)

5 Stages of Chronic Kidney Disease

Classification of CKD <ul style="list-style-type: none"> • Cause (C) • GFR (G) • Albuminuria (A) KDIGO 2012				Albuminuria Categories, Description and Range		
				A1	A2	A3
				normal to mildly increased	moderately increased	severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR Categories, Description and Range (mL/min/1.73 m ²)	G1	normal or high	>90			
	G2	mildly decreased	60-89			
	G3a	mildly to moderately decreased	45-59			
	G3b	moderately to severely decreased	30-44			
	G4	severely decreased	15-29			
	G5	kidney failure	<15			

The definition, classification, and prognosis of chronic kidney disease: a KDIGO controversies conference report. Kidney Int 2011; 80: 17-28; accessed <http://www.nature.com/ki/journal/v80/n1/full/ki2010483a.html>

Proteinuria

- Testing

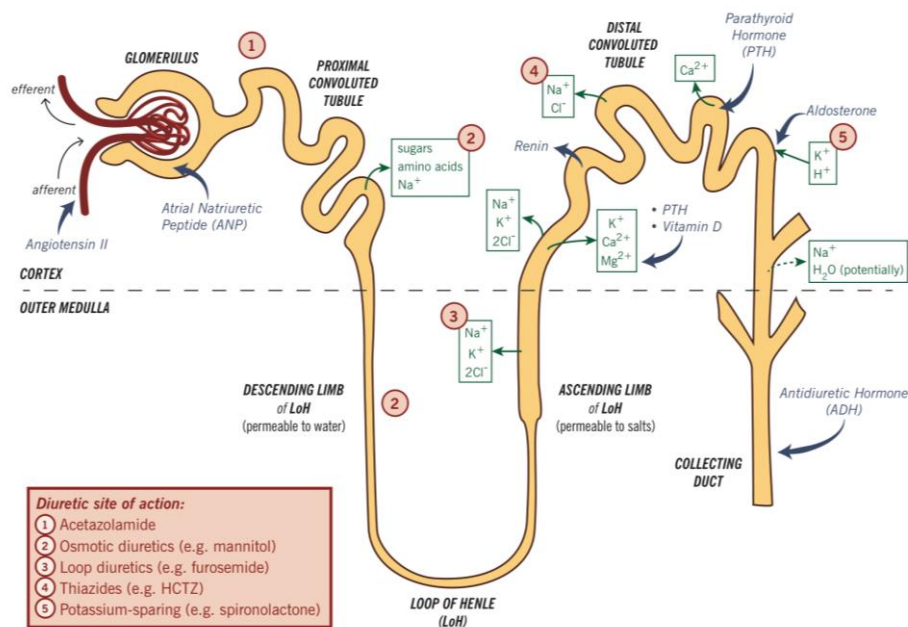
- Urinalysis dipstick
- 24 hour urine protein
- Spot ratios
 - Urine protein to creatinine ratio
 - Urine albumin to creatinine ratio

- Definitions

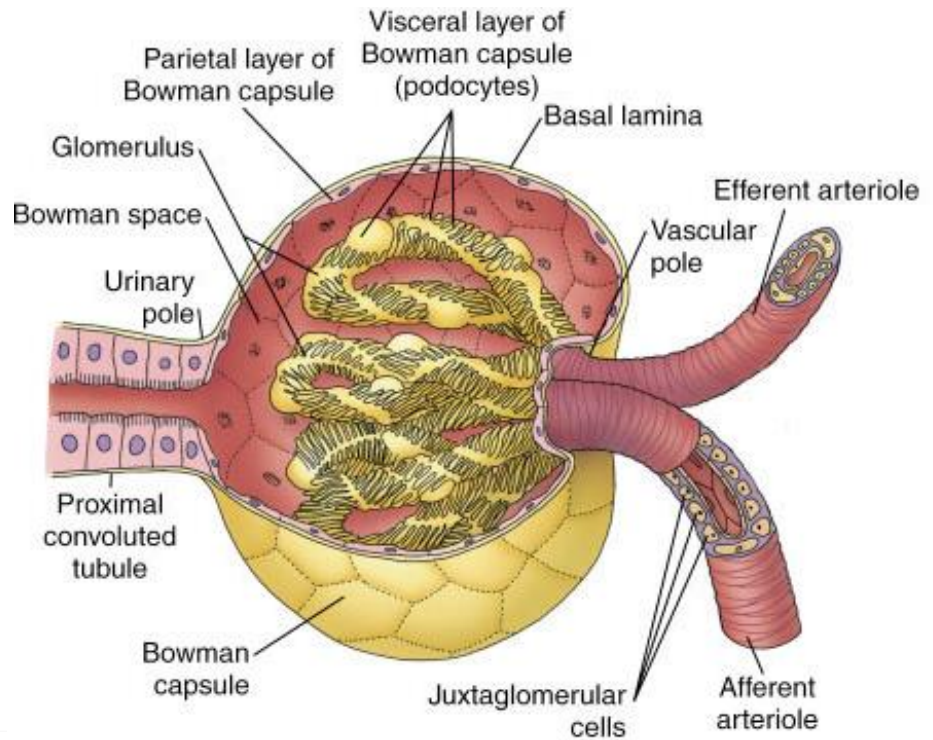
Term	Amount
Normal	0-30mg
Moderately elevated	30-300mg
Severely elevated	300-3500mg
Nephrotic range	>3500mg
Severe nephrotic range	>10,000mg

The Nephron and Kidney Disease

Hormones Acting on the Nephron / Diuretics and Their Site of Action



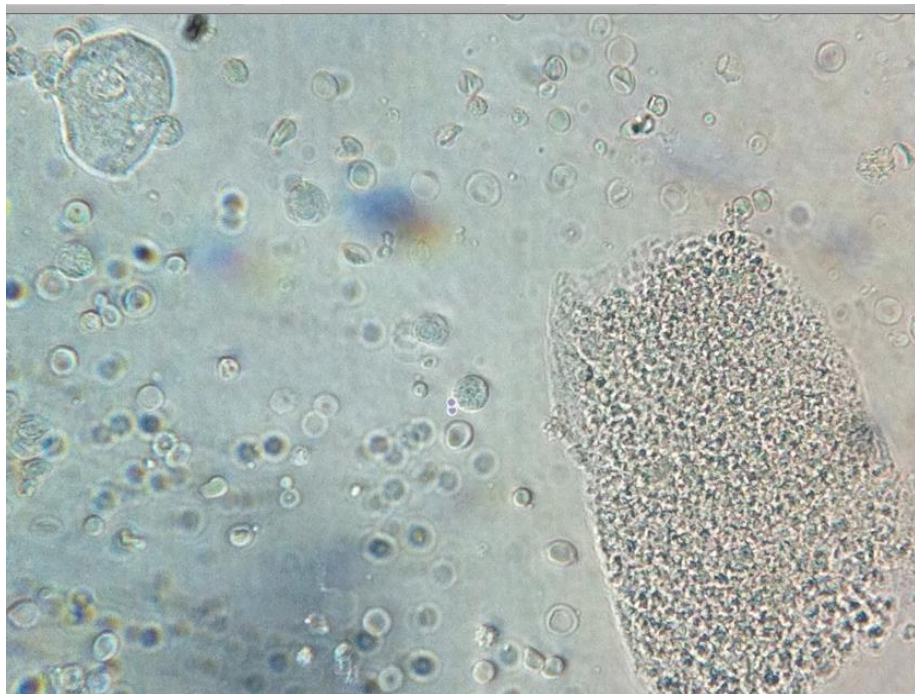
© Cassandra Uy



Gilbert, S., Weiner, D., et. al, National Kidney Foundation's Primer on Kidney Diseases, 7th Edition. October 2017. Elsevier 2018. ISBN: 9780323477949

Urinalysis

Dysmorphic RBCs



RBC casts



Gilbert, S., Weiner, D., et. al, National Kidney Foundation's Primer on Kidney Diseases, 7th Edition. October 2017. Elsevier 2018. ISBN: 9780323477949

Definition of CKD

- Presence of either **kidney damage** or **decreased kidney function** for > 3 months
 - **Kidney damage:**
 - Elevated albuminuria >30mg/gmCr
 - Structural abnormalities of the kidneys
 - Pathological abnormalities of the kidneys
 - Active urinary sediment
 - **Decreased kidney function:**
 - eGFR <60mL/min
- Mimickers of CKD
 - Medications that reduce tubular Cr secretion or affect Cr assay (i.e. cimetidine, Trimethoprim/Sulfamethoxazole, tyrosine kinase inhibitors, flucytosine)
 - Large animal protein meal, creatinine supplementation
 - Chronic or intermittent volume depletion
 - Transient albuminuria- Vigorous exercise or orthostatic albuminuria

When to Refer to Nephrology

- Stage 4 CKD (eGFR <30mL/min)
- Persistent, severely elevated albuminuria >300mg at any level of eGFR
- Active urinary sediment or concern for glomerular disease
- Rapidly declining renal function (30% decline in eGFR) occurring over days to weeks
- Other conditions- acid base/electrolyte disorders, refractory hypertension, kidney transplant management, recurrent nephrolithiasis, presumed hereditary kidney disease

Evaluation **Prior** to Nephrology Referral

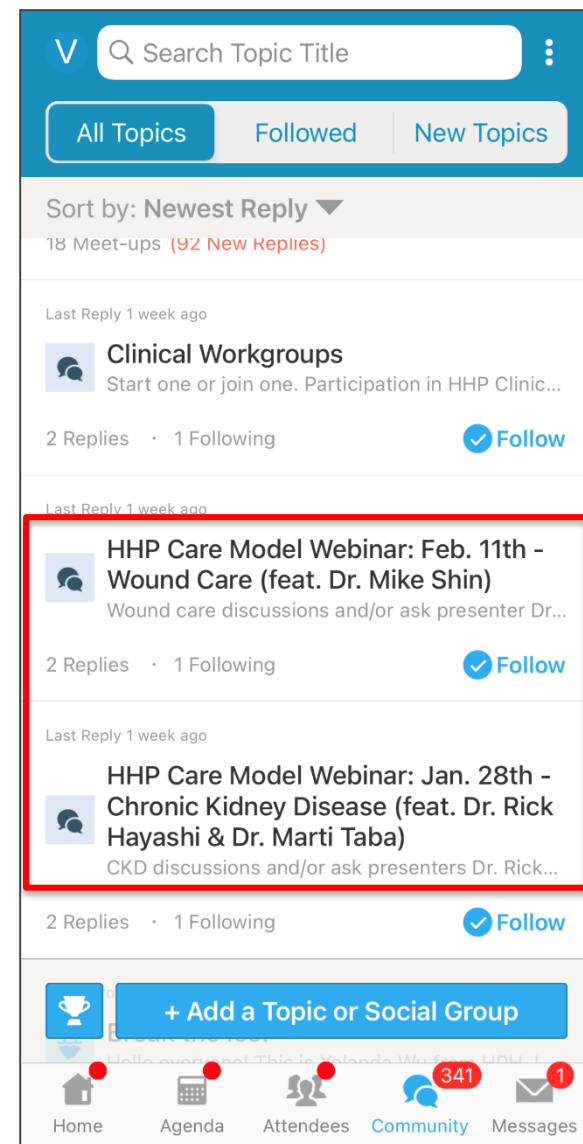
- **Assess kidney anatomy**: Kidney ultrasound
- **Detect glomerular disease**: Urinalysis and urine albumin to creatinine ratio
- **Rule out myeloma**: SPEP and serum free light chain ratio
- **Screen for CKD bone disease**: iPTH, ca, phos and vitamin D
- **CKD education/support**: (for stage 4 CKD and higher)
 - **Aloha Kidney**: Educational resource about CKD, diet, renal replacement therapy, transplant etc.
 - **Malama Kidney Center**: Multidisciplinary support with renal dietician, social worker, counselors

References:

- Centers for Disease Control and Prevention: Chronic Kidney Disease (CKD) Surveillance System – Tracking Kidney Disease in the United States. Website on CKD accessed on 01/28/21:
<https://nccd.cdc.gov/ckd/>
- Gilbert, S., Weiner, D., et. al, National Kidney Foundation's Primer on Kidney Diseases, 7th Edition. October 2017. Elsevier 2018. ISBN: 9780323477949
- Kidney Int. 2011. The definition, classification, and prognosis of chronic kidney disease: a KDIGO controversies conference report.; 80: 17-28; accessed <http://www.nature.com/ki/journal/v80/n1/full/ki2010483a.html>
- Na'ai D, Raphael KL. CKD in Native Hawaiians and Pacific Islanders: Trouble in Paradise. *Clin J Am Soc Nephrol*. 2019;14(11):1661-1663. doi:10.2215/CJN.03260319

Whova: Webinar Discussion Topics

- Discussion topic opens 1st week of the month.
- Before & after the webinar:
 - Ask presenters questions.
 - Discuss with your colleagues
- How to Access
 - Instruction emails sent earlier today.
 - Need assistance?
Info@hawaiihealthpartners.org



Q&A

CREATING A HEALTHIER HAWAI'I

**HAWAI'I
PACIFIC
HEALTH**

HAWAI'I
HEALTH
PARTNERS

Next Webinar:

HHP Care Model and Disease Management Webinar:

Wound Care

Dr. Mike Shin & Dr. Sandra Noon

Thursday, February 11, 2021

5:30pm – 6:30 pm

Thank you!

- A recording of the meeting will be available afterwards
- Unanswered question?
 - Contact us at info@hawaiihealthpartners.org