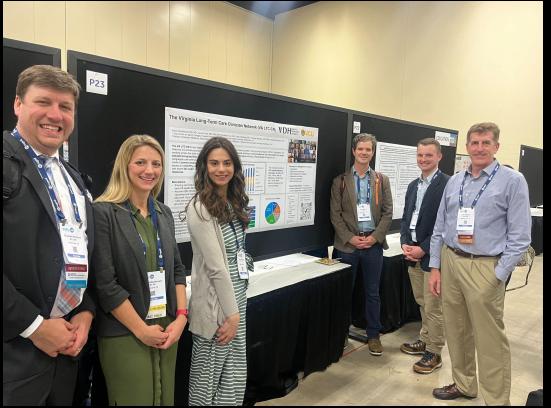


# Virginia Long-Term Care Clinician Network

## Monthly Forum





The Virginia Long-Term Care Clinician Network is managed by VCU's Division of Geriatric Medicine, Virginia Center on Aging, and Department of Gerontology.

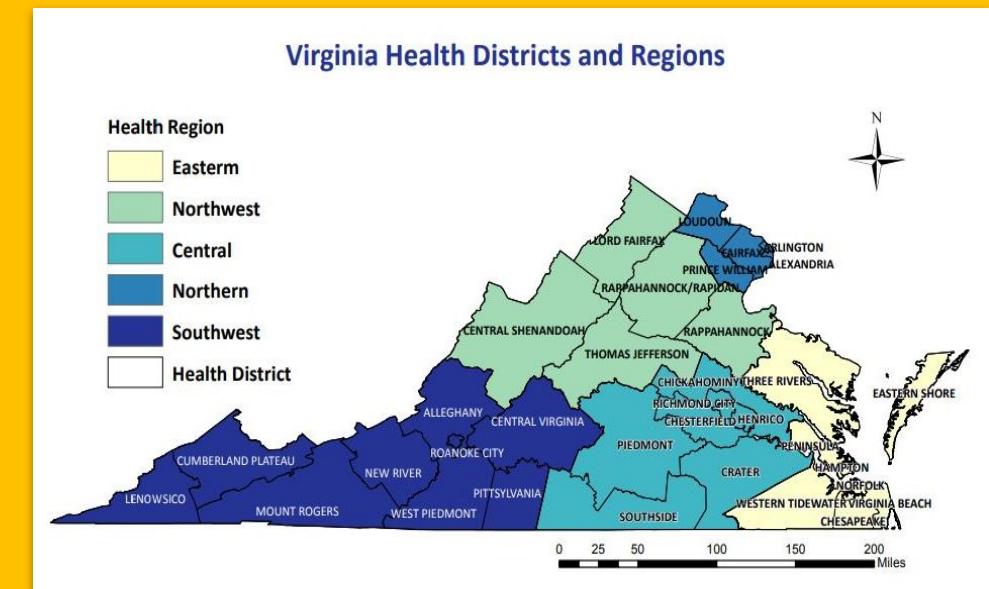


# Accreditation

	In support of improving patient care, VCU Health Continuing Education 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.
	VCU Health designates this live activity for a maximum of <b>1.00 AMA PRA Category 1 Credits™</b> . Physicians should claim only the credit commensurate with the extent of their participation in the activity.
	VCU Health Continuing Education designates this activity for a maximum of <b>1.00 ANCC</b> contact hours. Nurses should claim only the credit commensurate with the extent of their participation in the activity.
	VCU Health Continuing Education has been authorized by the American Academy of PAs (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for <b>1.00 AAPA Category 1 CME credits</b> . PAs should only claim credit commensurate with the extent of their participation.

# Welcome new members!

**Question from a member: have you bought your own pocket ultrasounds? Feedback on its usefulness?**



There are approximately 287 nursing homes and 580 assisted living facilities operating in Virginia. Within these, there are over 500 clinicians providing care. **We have 322 network members.** The Network provides ongoing learning and communication.

***Remind your work colleagues to attend so they can get education, support and CME!***

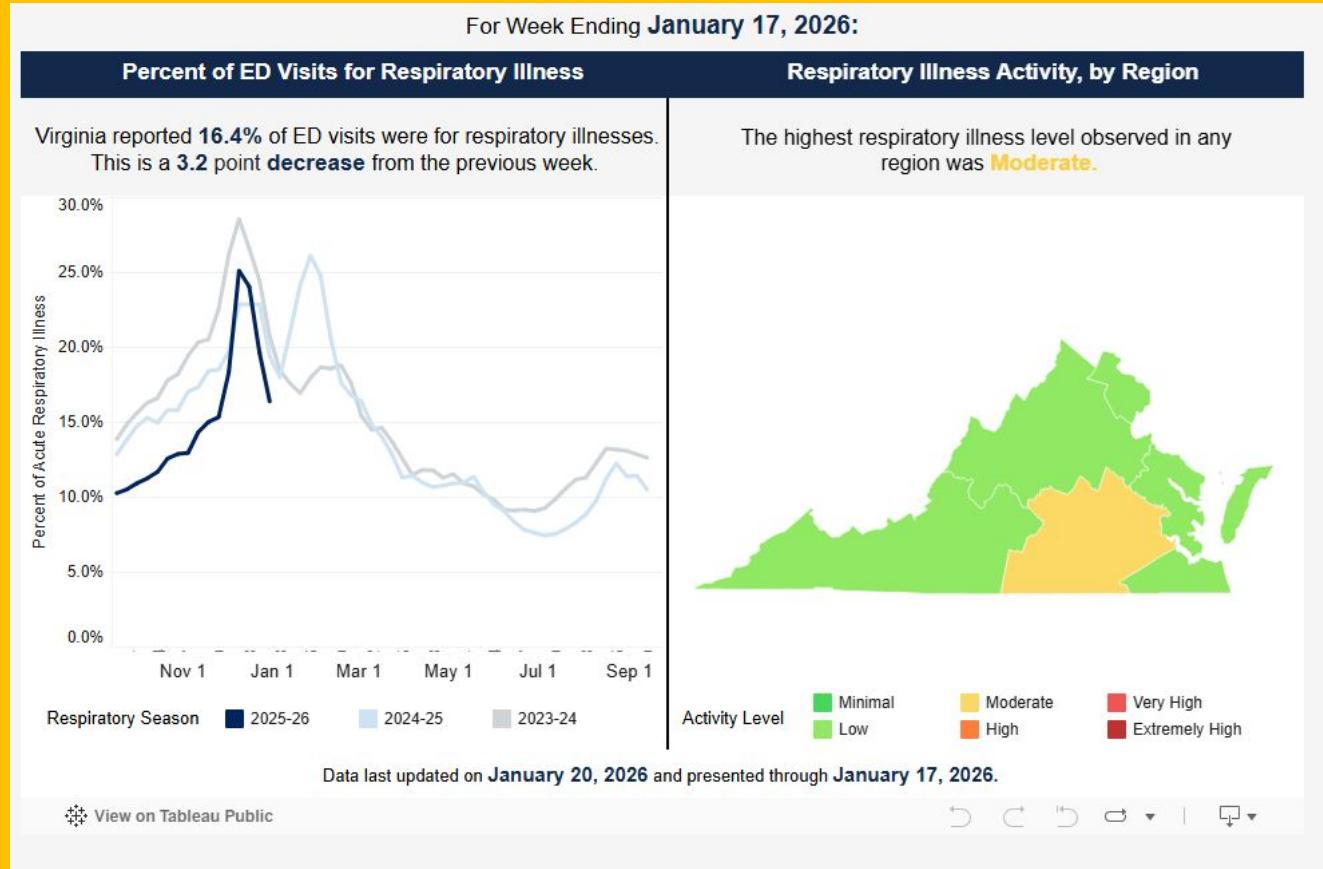
# Waterfall Poll

Are your respiratory illnesses going down like a waterfall?

Yes

No

Tell us more?



<https://www.vdh.virginia.gov/epidemiology/respiratory-diseases-in-virginia/data/#illness-Trends>

# Disclosure of Financial Relationships

## Disclosure of Commercial Support:

We acknowledge that no commercial or in-kind support was provided for this activity.

# Claiming CE Credit Through VCU



## NEW ACCOUNT NEEDED

Go to [vcu.cloud-cme.com](http://vcu.cloud-cme.com) to create an account – make sure to add your cell phone number



## EXISTING ACCOUNT MEMBERS

Text the 5 digit code to (804) 625-4041 within 5 days

If you are driving during the Forum email [lfinch@vcu.edu](mailto:lfinch@vcu.edu) after the meeting for the code.

TEXT ##### to  
804-625-4041

You will receive a text message and an email.

## Complete Evaluation & Claim Credit,

within 60 days of the event and download your certificate of completion

Need help? [ceinfo@vcuhealth.org](mailto:ceinfo@vcuhealth.org)



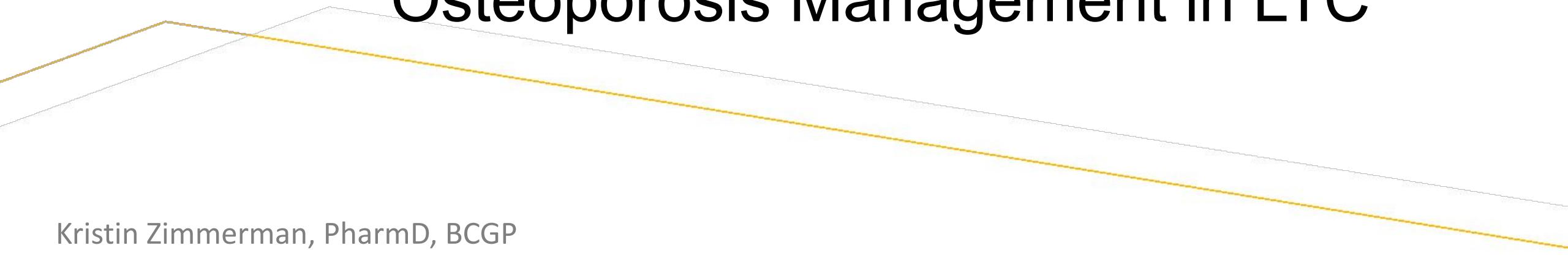
Gerontology and the Virginia Center on Aging



**WE ARE THE UNCOMMON.**

# **Strong Bones, Smart Care**

## Osteoporosis Management in LTC



Kristin Zimmerman, PharmD, BCGP  
Associate Professor, Geriatrics  
Department of Pharmacotherapy & Outcomes Science  
VCU School of Pharmacy

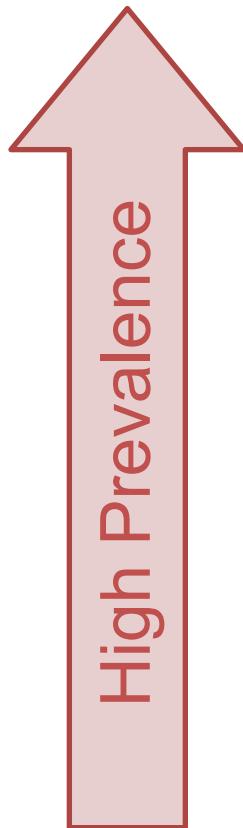


**VCU** School of Pharmacy

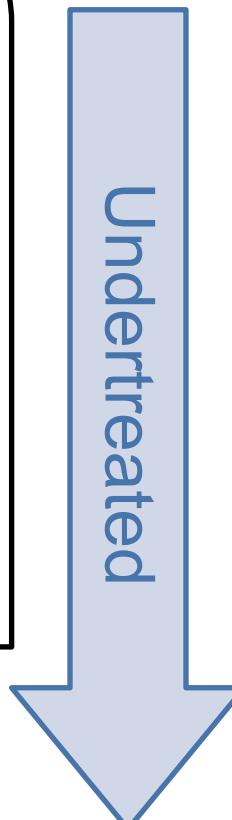
# Learning Objectives

1. Interpret clinical assessments of osteoporosis and apply these to patients in ALFs and SNFs.
2. Review pharmacological and non-pharmacological strategies for managing osteoporosis in long-term care settings.
3. Address challenges in managing osteoporosis for patients in ALFs and SNFs, including medication monitoring and deprescribing

# Osteoporosis LTC Care Gap



- High prevalence of risk factors (prior fx, low body wt, immobility, vit D deficiency, PPIs use, etc.)
- Record prevalence ~20% likely a vast underestimate
- True prevalence of up to ~75% among LTC residents
- Only 10-40% of those eligible for therapy receive it
- Multiple barriers to treatment (competing priorities, life expectancy, age bias, diagnostic access)



# Outcomes Matter in LTC

Loss of  
independence

Reduced  
mobility

Infections

Pressure  
ulcers

Transfers to  
higher level of  
care

Mortality

The risk is real

- 13-50% of LTC/ALF residents fall each year
- LTC OP fracture rate up to 2-4x community dwellers
- In the 6 months after a hip fracture, more than 1 in 3 NH residents die

# Screening & Assessment

## Screening

- All women 65+, postmenopausal women
- All men 70+
- Associated medical conditions, medications (e.g., low body weight, immobility, glucocorticoid use, vit D deficiency, PPI use, AED use etc.)
- Fragility fracture

## DXA

- T-score: -2.5 or less

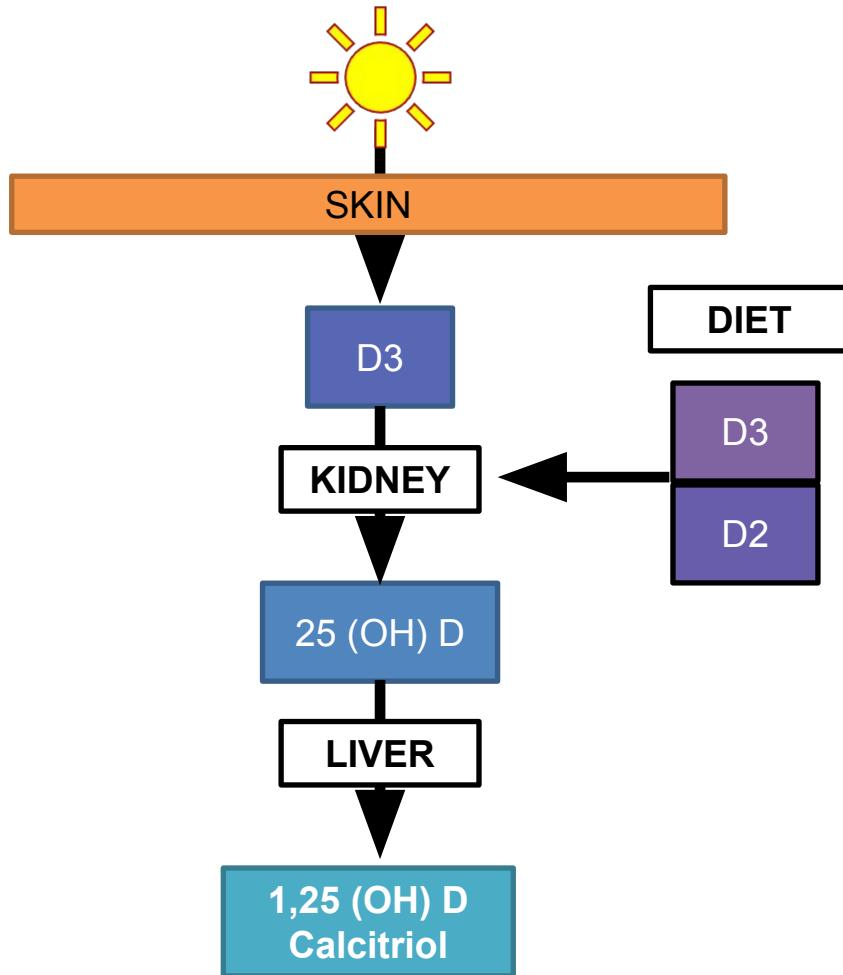
## FRAX

- Can be calculated without a DXA
- Likely underestimates risk in LTC
- 10-yr hip fx risk  $\geq 3\%$
- 10-yr major OP fx risk  $\geq 20\%$

## Fragility Fracture

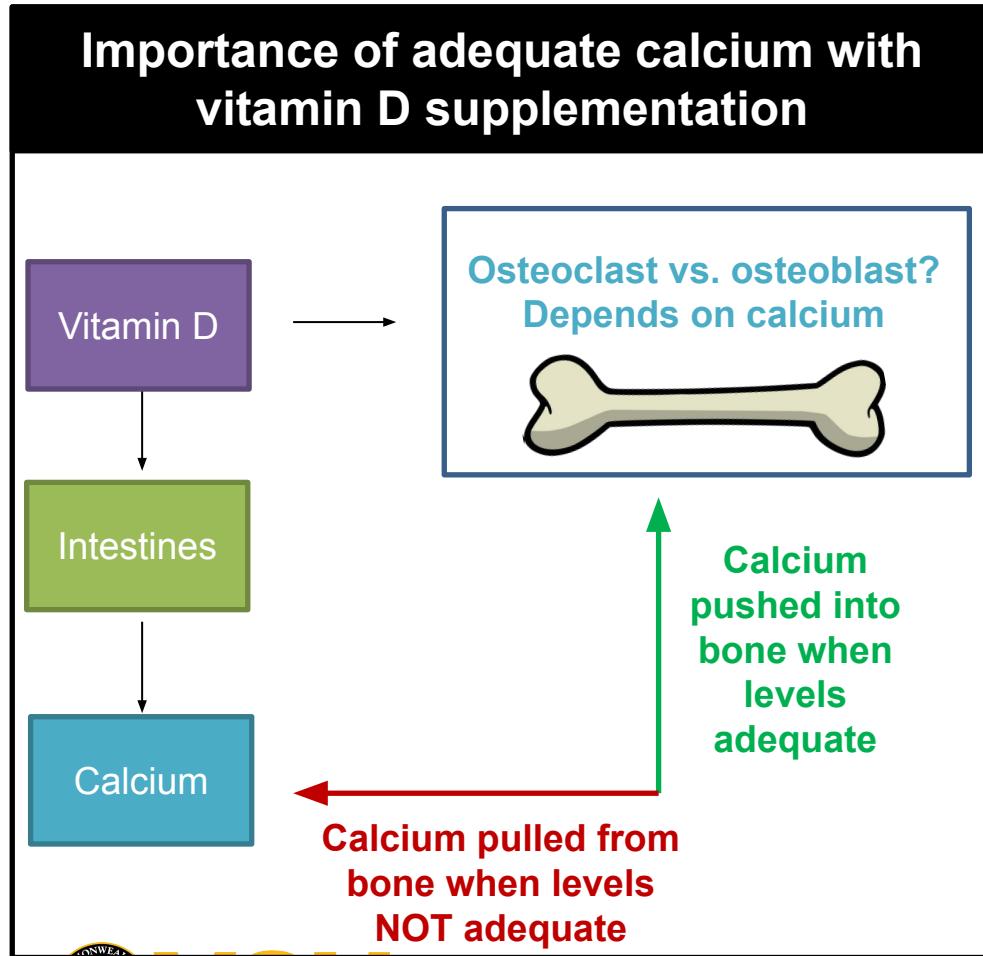
- Low impact fx hx (incl. compression fx!)

# Ensure Adequate Vitamin D...



25 (OH) Vitamin D Level	Vitamin D Supplementation
Deficient <20 ng/mL	50,000 IU weekly for 8-12 weeks OR 5,000 IU daily for 8-12 weeks ----- <input type="checkbox"/> 1,000+ units/day maintenance
Insufficient 20-29 ng/mL	1,000+ units/day
Sufficient 30-50 ng/mL	Maintain 800-1,000 IU daily  (Obesity, malabsorption, AEDs dark skin tone may require higher doses; max ~4,000 units/day)

# ...AND Adequate Calcium

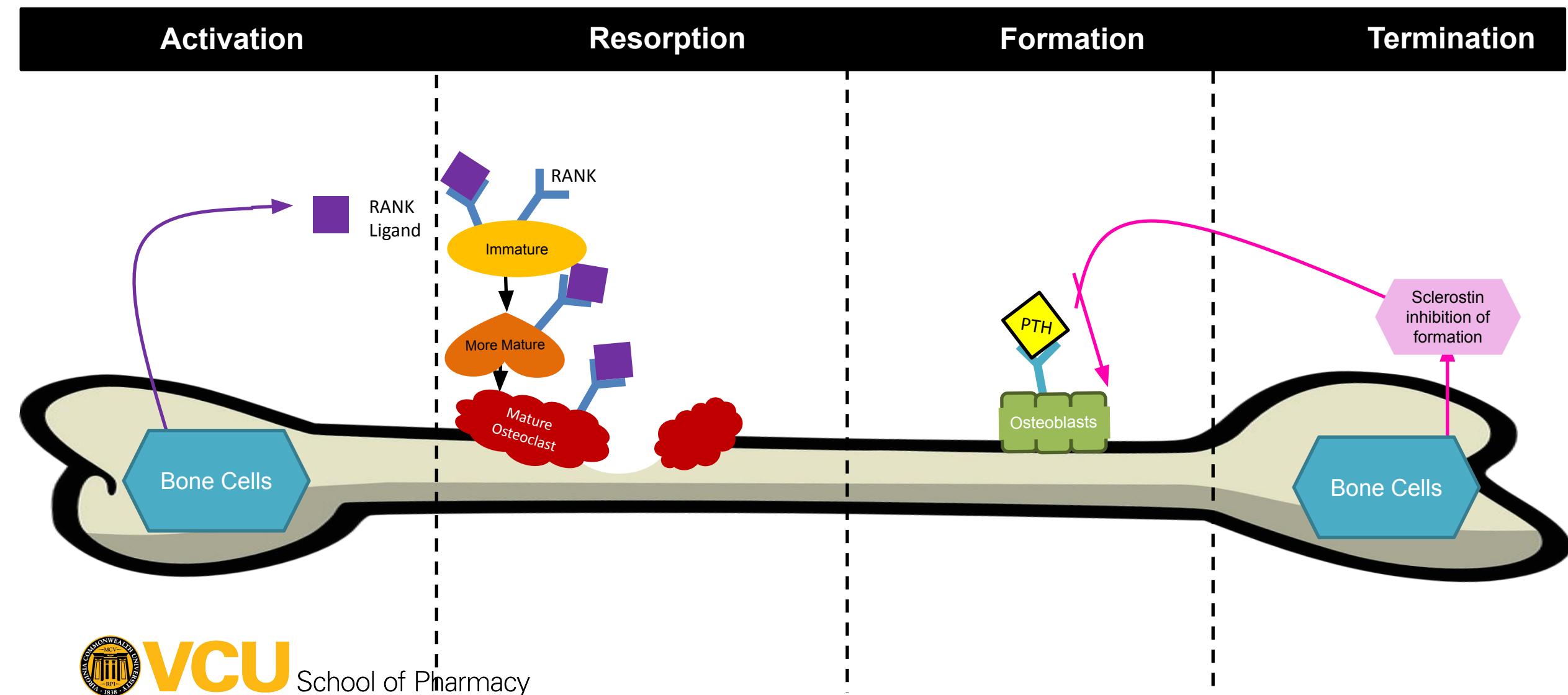


## Elemental Calcium

- RDA (and limit)  
1,200 mg/day (all sources)
- Tally & subtract dietary sources
- Fill gaps with supplement up to ~500 mg/day

Supplement	
Carbonate	40% elemental Acid Dependent Take with food
Citrate	21% elemental Acid independent Best in ↓ acid (e.g., PPI)
Gluconate	9% elemental
Oyster Shell	Heavy metals Not recommended

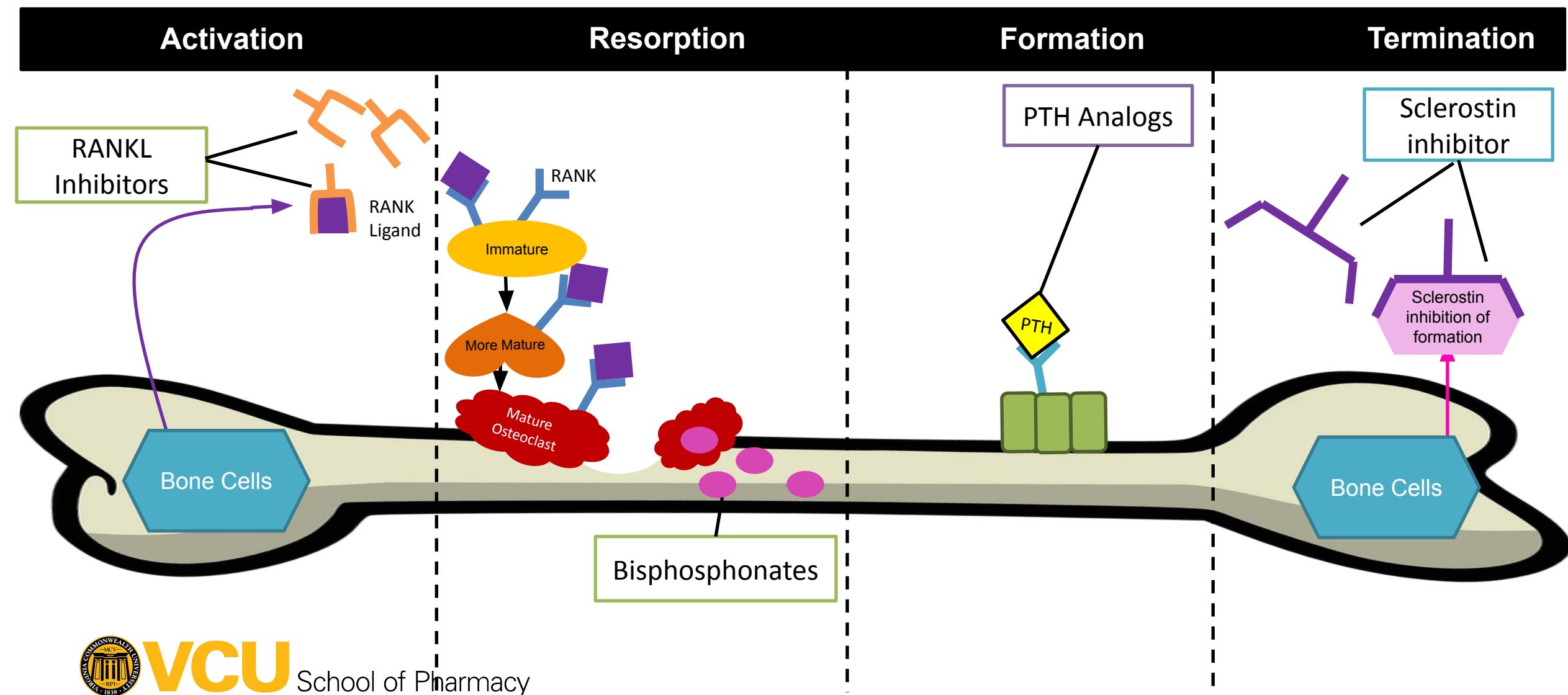
# Mechanisms of Bone Remodeling



# Pharmacotherapy in LTC

	Drug Class	Mechanism
<b>Antiresorptive (Anti-Clast!)</b>	Bisphosphonates	Incorporated into bone before remodeling. Taken up by osteoclasts during remodeling. ↓ osteoclast function, cause apoptosis.
	Rank-Ligand inhibitor (denosumab)	Antibody inactivates RANK-ligand. ↓ osteoclast maturation, causes apoptosis.
<b>Anabolic (Pro-Blast!)</b>	PTH Analogs	Stimulates osteoblast activity by ↑ growth factors, ↓ sclerostin.
<b>Combination</b>	Sclerostin inhibitor	Antibody inactivates sclerostin. ↓ Resorption, ↑ osteoblast activity.

# Pharmacotherapy Targets



# Bisphosphonates

## Bisphosphonates: alendronate, risedronate, ibandronate, zoledronic acid (IV)

Effect	Highly effective, plateau ~2-5 years, last 10+ years!
Dosing	Oral agents: Daily, weekly, monthly IV zoledronic acid: yearly or every 2 years



### Low Bioavailability, Oral Bisphosphonate Admin:

1. Take first thing in the morning before eating/drinking, other meds
2. Take with 8 oz of plain water
3. Do not lie down or for at least 30 minutes

# Bisphosphonates

## Bisphosphonates: alendronate, risedronate, ibandronate, zoledronic acid (IV)

Effect	Highly effective, plateau ~2-5 years, last 10+ years!
Dosing	Oral agents: Daily, weekly, monthly IV zoledronic acid: yearly or every 2 years
Monitoring	Calcium: Hypocalcemia risk—ensure WNL Renal: Avoid if CrCl <30-35 ml/min
Adverse Effects	Common GI ADR with oral agents Post-IV-dose symptoms (fever, arthralgia, HA) Osteonecrosis of the jaw (rare) Atypical fractures (rarer)

- More common with ↑ duration, ↑ dose (cancer), IV formulation
- **Therapy does not need to be paused for dental work!**

# Bisphosphonates

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Adverse Effects	Common GI ADR with oral agents Post-IV-dose symptoms (fever, arthralgia, HA) Osteonecrosis of the jaw (ONJ) Atypical fractures
Duration	Oral agents: 5 years (high risk) to 10 years (very high risk) IV zoledronic acid: 3 years (high risk) to 6 years (very high risk)

# RANK-Ligand Inhibitor (Denosumab)

## RANK-L inhibitor: Denosumab

Effect	Highly effective Effects rapidly lost with DC, rebound fx risk
Dosing	SQ injection every 6 months
Monitoring	Calcium: Hypocalcemia risk—ensure WNL Renal: increases hypocalcemia risk, monitor Ca more closely
Adverse Effects	Rash, fatigue ONJ, atypical fracture (lower risk than bisphosphonates)
Duration	If therapy discontinued, <b><u>immediately</u></b> replace with alternate antiresorptive



- More common with ↑ duration, ↑ dose (cancer)
- **Therapy does not need to be paused for dental work!**

# PTH-Analogs

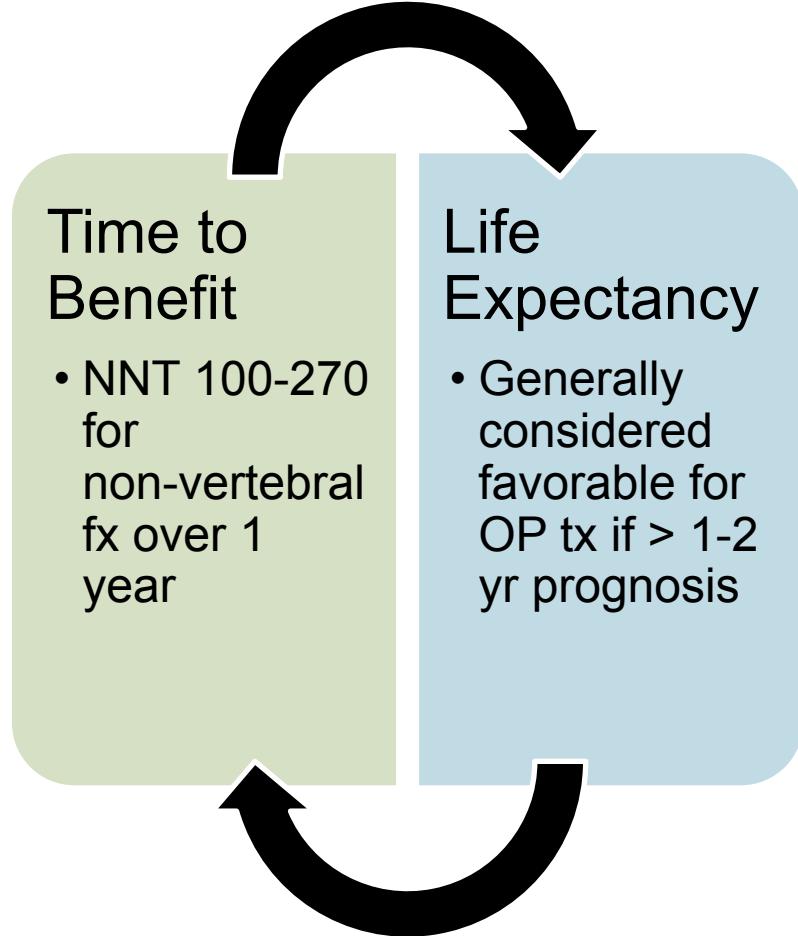
PTH Analogs: Abaloparatide, Teriparatide	
Effect	BIG GAINS in BMD (less if prior bisphosphonate) Effects lost over time with DC
Dosing	Daily SQ injection Monitor first dose for orthostasis
Adverse events	Mild; include leg cramps, muscle pain, weakness, nausea
Duration	2 years ALWAYS follow with antiresorptive

# Sclerostin Inhibitor (Romosozumab)

## Sclerostin Inhibitor: Romosozumab

Effect	BIG GAINS in BMD (less if prior bisphosphonate) Effects lost with DC
Dosing	Monthly SQ Injection x 12 doses Admin by a healthcare provider
Adverse events	Arthralgia, headache Rare ONJ and atypical fracture <b>Black Box: ↑ risk of MI, stroke, CV death</b> (avoid in hx MI/stroke past yr)
Duration	1 year (12 monthly doses) (CV risk) Follow with antiresorptive

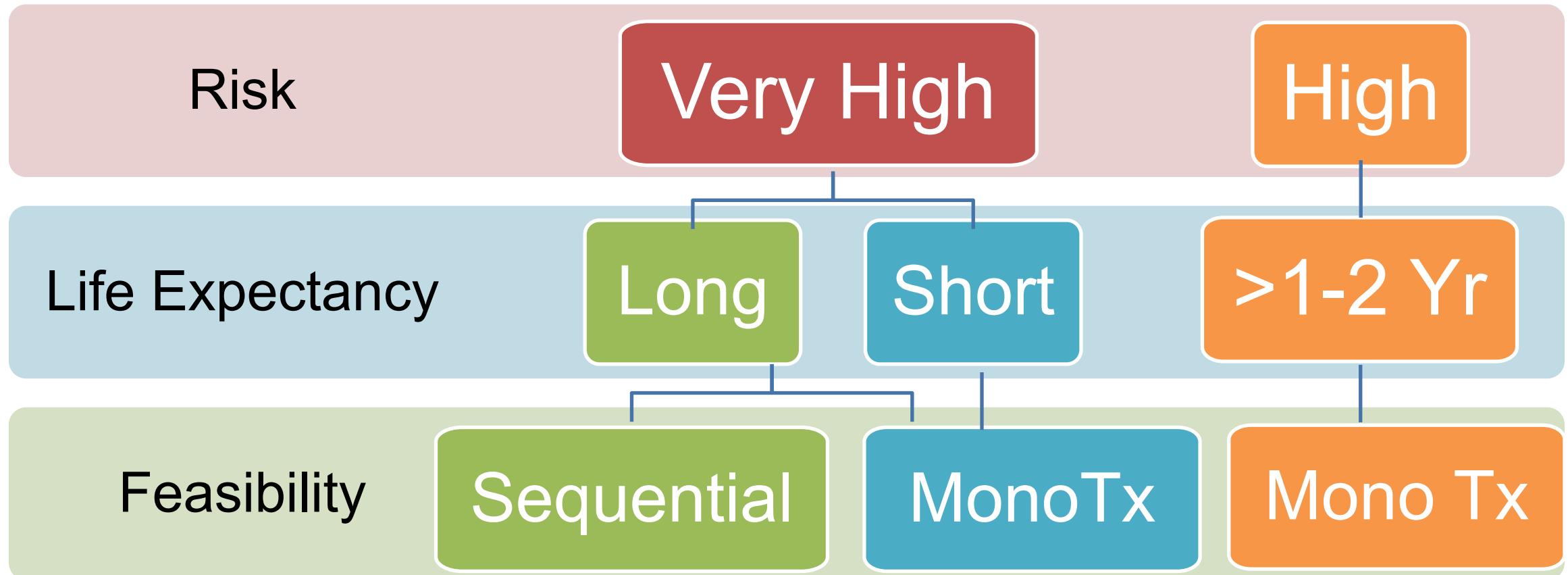
# Pharmacotherapy in LTC



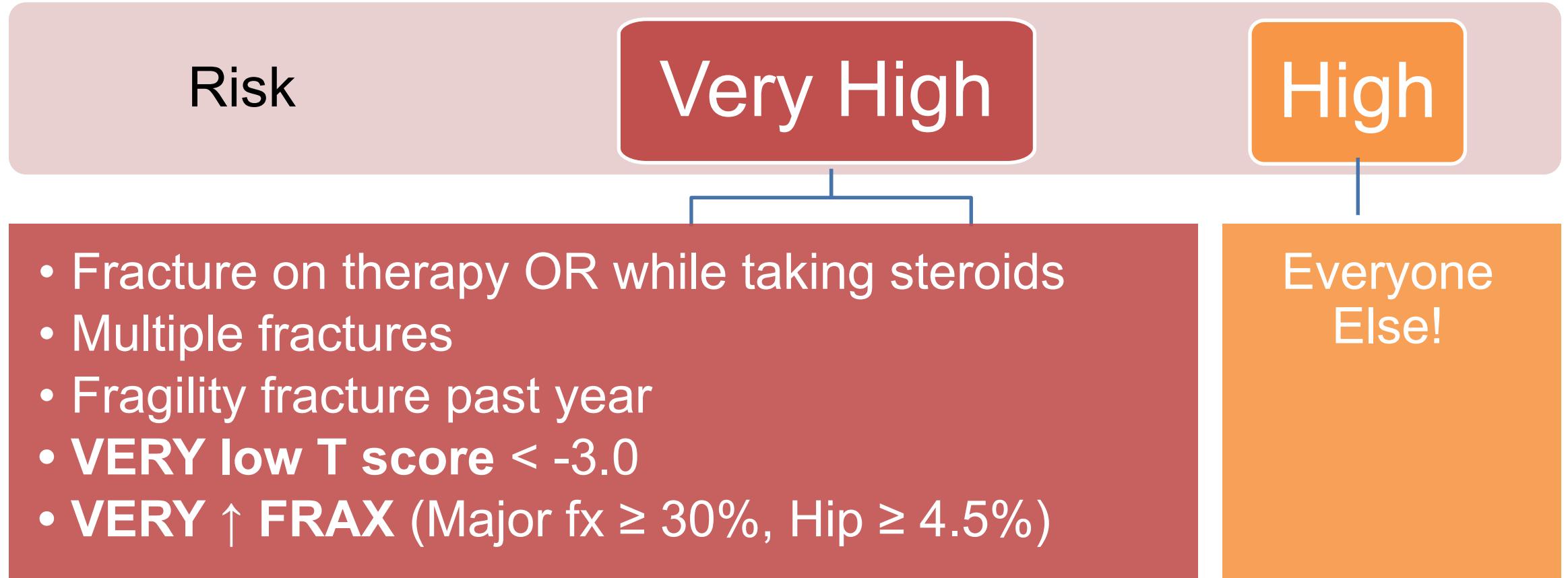
## Three KEY QUESTIONS:

1. What is the likelihood of another fracture (risk level)?
2. How aggressive should care be (life expectancy)?
3. How feasible is treatment (admin or access)?

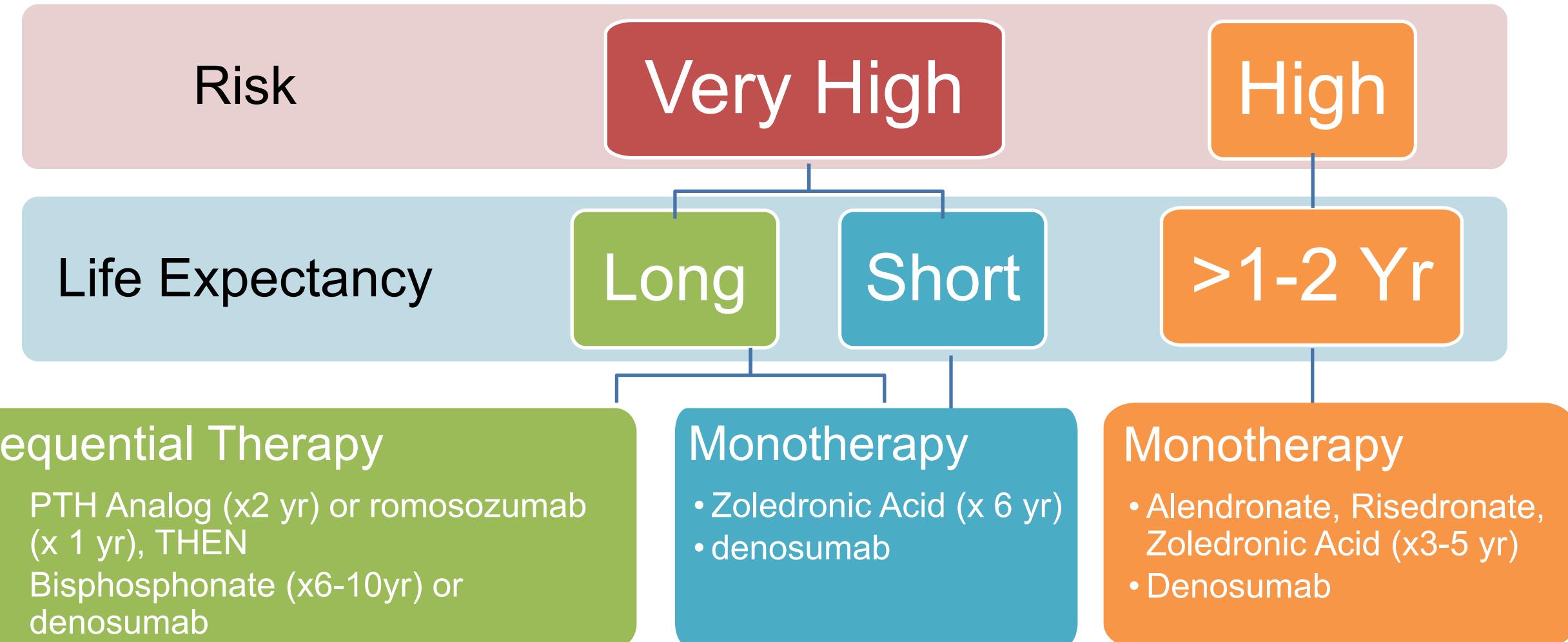
# Tx Algorithm in LTC



# Tx Algorithm in LTC



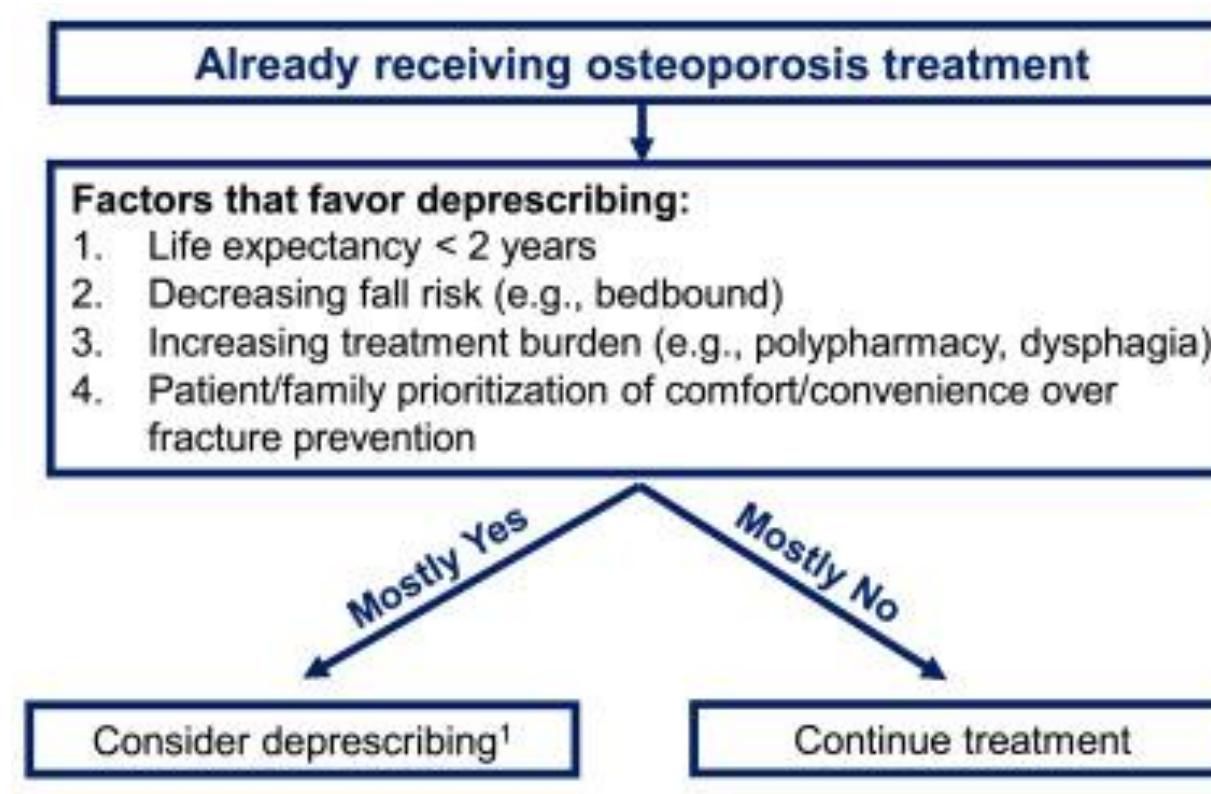
# Tx Algorithm in LTC



# Feasibility Summary

Drug	Feasibility Strengths	Feasibility Challenges
Oral Bisphosphonates	Low cost	Admin burden, dysphagia, renal limits
IV Zoledronic Acid	Once yearly	Infusion, renal limits
Denosumab	SQ injection Q6 mo., safer in CKD	Adherence is key, benefits rapidly lost, hypocalcemia risks and frequent Ca checks
PTH Analogs	Daily SQ injection	Cost
Romosozumab	Monthly SQ injection	Adherence is key, CV risk, cost

# Deprescribing in LTC



Niznik JD. doi: 10.1016/j.jamda.2022.09.013. PMID: 36335990.

# Take Home Points

- Osteoporosis in LTC matters, and it's undertreated
- Examine hx, calculate a FRAX, DXA might not be feasible
- Consider vitamin D **with adequate calcium**
- Consider risk, life expectancy, and feasibility in decision-making
- Deprescribing makes sense in limited life expectancy, bedbound, advanced dementia, etc..

# Open Forum

Any questions or ideas  
from the talk?

Todays CE Code is  
#####

Text this code to 804-625-4041



# Report shows Southside Virginia has more than 3,400 health care jobs that are unfilled

*The report shows there's a mismatch between the workers available and the jobs available. Southside has manufacturing workers with no jobs but health care jobs with no workers available to fill them.*



<https://cardinalnews.org/2026/01/05/report-shows-southside-viginia-has-more-than-3400-health-care-jobs-that-unfilled/>



Gerontology and the Virginia Center on Aging



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Table 6.1: Workforce Availability and Job Openings, Q1 2025

Occupation Groups	Available Workforce	Job Openings	Labor Surplus
	June 2025	Q1, 2025	
Architecture and engineering	98	179	-81
Arts, design, entertainment, sports, and media	163	352	-189
Building and grounds cleaning and maintenance	619	477	142
Business and financial operations	540	370	170
Community and social service	299	690	-391
Computer and mathematical	144	161	-17
Construction and extraction	543	352	191
Education, training, and library	833	563	270
Farming, fishing, and forestry	177	20	157
Food preparation and serving related	1801	1,076	725
Healthcare practitioners and technical	434	3,854	-3,420
Healthcare support	1222	820	402
Installation, maintenance, and repair	494	727	-233
Legal	36	18	18
Life, physical, and social science	78	174	-96
Management	786	1,081	-295
Office and administrative support	1281	958	323
Personal care and service	498	178	320
Production	1186	359	827
Protective service	392	196	196
Sales and related	1346	1,631	-285
Transportation and material moving	1513	1,147	366
<b>Total</b>	14,483	15,383	-900

Note: A negative number implies there is a labor shortage in those occupations

Source: Chmura Economics & Analytics

The Southern Virginia Living Wage and Job Availability Analysis report contains this list of job openings and available workforce in each category.

# Thank you for joining us!

**Updates and News** - See News Updates via email and newsletter

**Next Monthly Forum:**

- **Feb. 18, 2026 - Public Health Issues Dr. Brooke Rossheim**
- **March 17, 2026 Dr. Bergman**

**Your Calendar Link** - In the Zoom Registration Confirmation email you received today, there's a calendar link to update your calendar for future meetings.

**On your way out of our meeting today, kindly answer a brief feedback survey.**

**Invite your colleagues!** They can register at [ltccn.vcu.edu](http://ltccn.vcu.edu)



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