Hand and Wrist Pain Scenario:

A 42-year-old female has pain in both hands.

Using the Epi-logical approach, what should be the probable diagnoses?

She is at the right age for almost all differentials on the mind map, so the clinician should consider them all.

How should a clinician address urgent/emergent situations?

There are almost no urgent/emergent situations when it comes to conditions causing hand pain, except for an acute fracture or traumatic injury, which should be easily diagnosable under most circumstances. Regardless, the patient's vitals are normal and she is in no distress.

Weighing and Removing Anchor Bias

The clinician already knows the fact that the pain is in both hands. This gives the clinician enough information to start suspecting conditions that affect both hands. The clinician will ask further questions.

The Clinician's Questions	The Patient's Responses	How does this information help with diagnostic reasoning?
Where exactly do you have pain in your hands? Is it just the hands or the fingers as well?	It's in my hands and fingers.	Conditions that cause pain in both hands and fingers are more likely, such as carpal tunnel syndrome, osteoarthritis, rheumatoid arthritis, and ulnar tunnel syndrome. The clinician should keep in mind that these conditions do not always present with bilateral pain, especially carpal tunnel and ulcer tunnel syndromes, but both hands can get involved along the spectrum of the disease process. Conditions which typically cause unilateral pain include a fracture, trauma, and soft tissue injury, Dupuytren's contracture, and DeQuervain tenosynovitis, are less likely.
When did this pain start?	It's been going on for about 4 months.	Chronic conditions are more likely. Acute conditions such as a fracture and soft tissue injury (such as a burn, trauma, or infection) are less likely.

Do you remember how this pain started? Was it after overusing your hands, or an injury that you might recall?	I don’t recall. This was a gradual process.	This does not change the likelihood of any diagnoses, but it confirms that there is no acute process.
What kind of work do you do?	I am a court reporter, and do use my hands, but I have been doing it for years, and never had any problem until a few months ago.	Conditions which are either caused by or precipitated by overuse are more likely, such as osteoarthritis, rheumatoid arthritis, carpal tunnel and ulnar tunnel syndrome. Among these, rheumatoid arthritis is not typically caused by overuse. Instead, patients tend to have stiffness after a period of rest. However, in the later stages of the disease, pain can get worse with overuse.
Do you have any numbness, tingling, or weakness in your fingers?	Sometimes I do feel that my hand grip is weak. But I do not have any tingling or numbness.	All four diagnoses which the clinician is considering are still likely. Weakness is usually on the radial or ulnar side of the hands or fingers in case of carpal tunnel and ulnar tunnel syndrome, but often patients have difficulty making that discrimination, and they tend to describe a general weakness.
Do you notice any swelling or stiffness in your finger joints? (*This is another situation where the clinician can start the inspection part of the physical exam while still gathering history related information)*	Yes, I do have a lot of stiffness, and I keep popping my knuckles. I guess there is some swelling as well, but I can’t tell for sure. (*The clinician notices some swelling at the proximal interphalangeal joints)*	Osteoarthritis and rheumatoid arthritis are more likely.
Is the stiffness more severe in the morning, or in the evening after you have used your hands all day?	I can’t tell for sure, but it’s usually after a period of rest, and especially worse in the morning.	Rheumatoid arthritis is more likely than osteoarthritis.
At this point, the clinician has more evidence in favor of Rheumatoid arthritis than any other diagnosis. However, the clinician should keep in mind that osteoarthritis is much more common in the general population. Although the patient is not complaining about pain and weakness on the medial or lateral side of her hand, carpal tunnel and ulnar tunnel syndromes are still strong possibilities, because many patients are not able to articulate their symptoms to		

<table>
<tr><td colspan="3">this level of specificity. In addition, carpal tunnel syndrome is much more common in the general population than Rheumatoid arthritis, so the clinician should keep these points in mind. Regardless, the clinician should ask some questions to remove anchor bias.</td></tr>
<tr><td>Do you have any pain or discomfort in your neck with certain movements?</td><td>I do have some stiffness in my neck as well, but it has been going on for a long time.</td><td>Cervical radiculopathy could be likely. Stiffness in cervical joints could also be a manifestation of Rheumatoid or Osteoarthritis. Among the above diagnoses, this feature favors cervical radiculopathy the least because of the bilateral involvement of the hands, unless cervical radiculopathy was due to a disease process which involved bilateral nerve roots, such as cervical spinal stenosis.</td></tr>
<tr><td>OK. I am trying to see if your neck stiffness and the pain in your hands are related to each other. Does your neck discomfort seem to radiate down to your arm, especially with certain movements?</td><td>No, I don’t notice that.</td><td>Cervical radiculopathy is less likely.</td></tr>
<tr><td colspan="3">Now the clinician can ask additional medium yield questions about the diagnoses which the clinician is considering most strongly. These questions could have been asked earlier, before asking about the radiation of pain, but because the clinician was on the topic of pain and all its features, the clinician completed that set of questions out of convenience before moving on to another topic.</td></tr>
<tr><td>Do you have any skin rash, pain in large joints, such as knees, shoulders, hips, or any morning stiffness?</td><td>I have a lot of generalized body aches and pains which I have been told are due to regular arthritis, but I don’t have any rash.</td><td>Both Rheumatoid and Osteoarthritis are likely. The patient either has a correct previous diagnosis of osteoarthritis, a wrong diagnosis of osteoarthritis, or has both rheumatoid and osteoarthritis. Skin rash or rheumatoid skin nodules are not very common, at least in the early part of the disease process.</td></tr>
<tr><td>Do you have any other medical condition? (This information can be obtained</td><td>My thyroid function is low, and I also have anemia.</td><td>These two may be unrelated to the patient’s current condition, but also could point to an underlying</td></tr>
</table>

by reviewing the patient's chart)		autoimmune disorder affecting multiple systems.
Do you take any medicine? (This question does not necessarily help with the diagnosis, but helps to determine the severity of the patient's symptoms, as well as find out if there are additional medical conditions)	None, other than a thyroid supplement and a multi-vitamin.	Neutral.
The clinician can now move on to the physical exam.		
General	A comfortable appearing female in no distress with normal skin color.	Neutral.
Musculoskeletal (upper extremities and neck)	A normal range of motion at the cervical spine, and no reproducible pain, tingling, or numbness associated with it. A normal tone and bulk of hand muscles, and mildly swollen proximal interphalangeal and metacarpophalangeal joints in all ten fingers. A normal range of motion. A positive squeeze sign in multiple fingers. Provocation tests for carpal tunnel syndrome (Phalen's and Tinel's) are negative. Normal sensation and strength in both hands and all fingers.	More evidence in favor of Rheumatoid arthritis.
Additional musculoskeletal exam	A normal range of motion at the thoracic and lumbar spine	This exam is not needed if the clinician is not strongly suspecting rheumatoid arthritis

So far, based upon the history and physical exam, the clinician has most evidence in the favor of Rheumatoid arthritis, and proceeds with lab testing and imaging. The labs show mild normocytic anemia, with hemoglobin of 11gm/dl, the sedimentation rate is 60, and anti-nuclear antibody test with reflex panel is positive for Rheumatoid arthritis. Citrullinated antibodies are positive. The upper extremity imaging is normal. The final diagnosis is Rheumatoid arthritis.