2020

Internal Medicine Consultation for Dentists

Nina Mingioni, MD
Thomas Jefferson University

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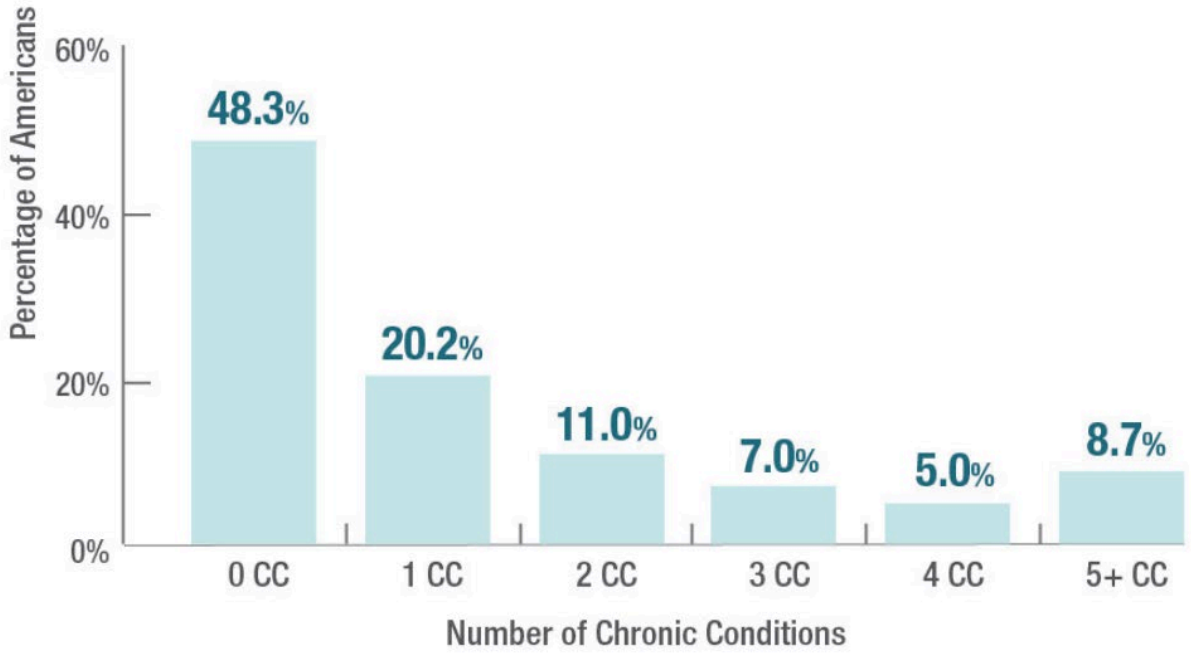
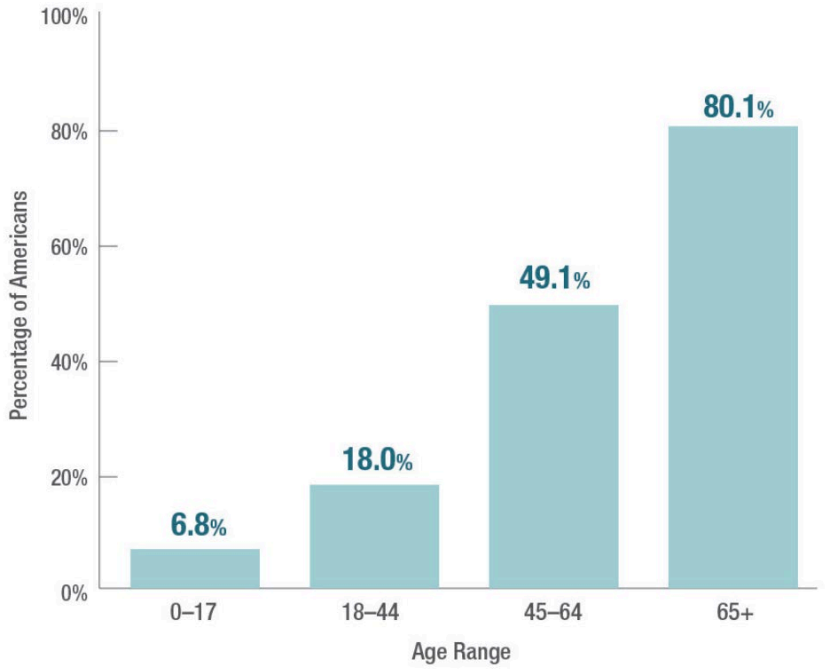
Nina Mingioni, MD FACP
Internal Medicine
Sidney Kimmel Medical College
Thomas Jefferson University

Percentage of All Americans with Chronic Conditions, by Number of Chronic Conditions – 2010



Percent of All Americans with Multiple Chronic Conditions, by Age Group – 2010



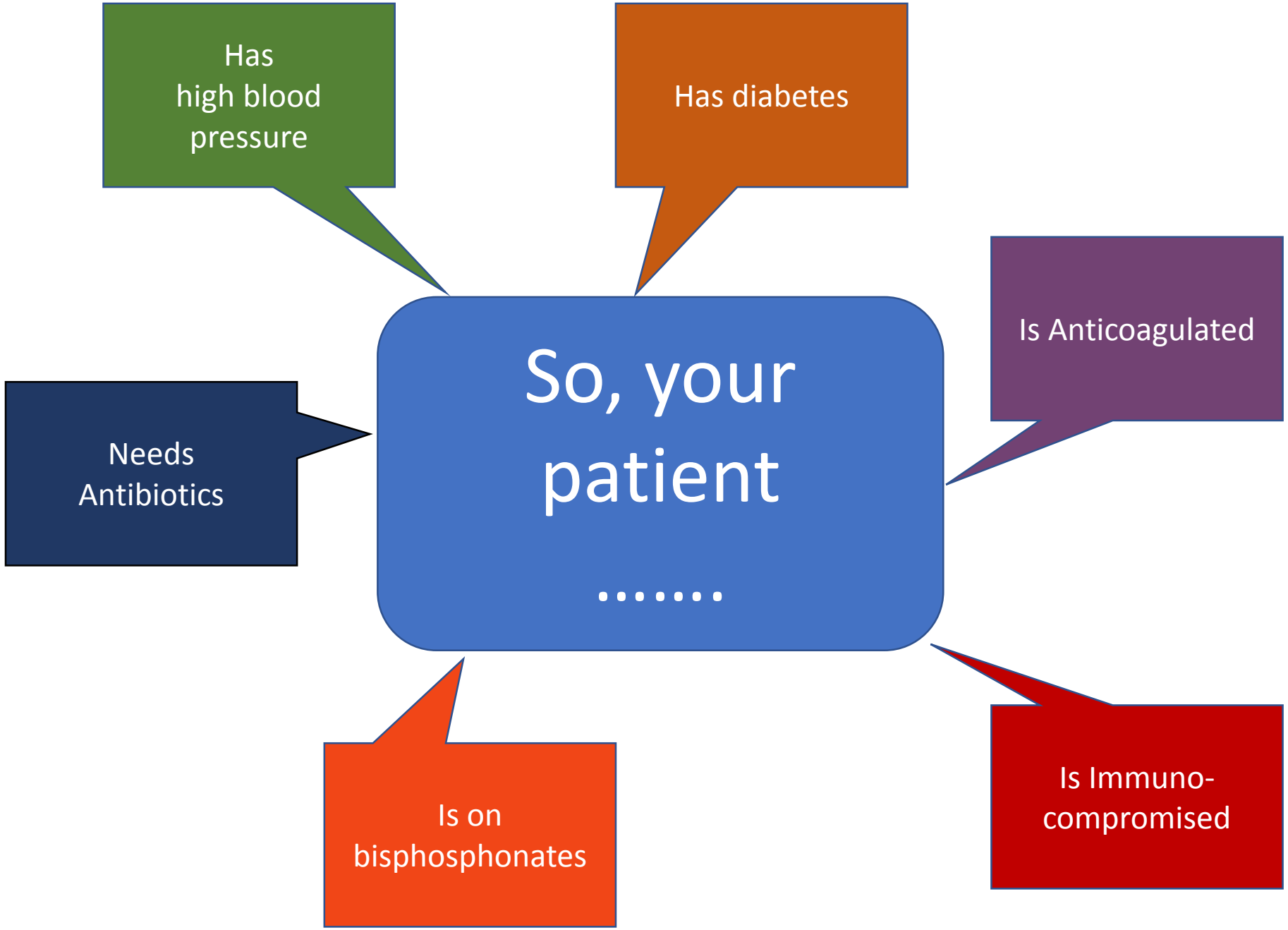
Gerteis J, Izrael D, Deitz D, LeRoy L, Ricciardi R, Miller T, Basu J. Multiple Chronic Conditions Chartbook. AHRQ Publications No, Q14-0038. Rockville, MD: Agency for Healthcare Research and Quality. April 2014.

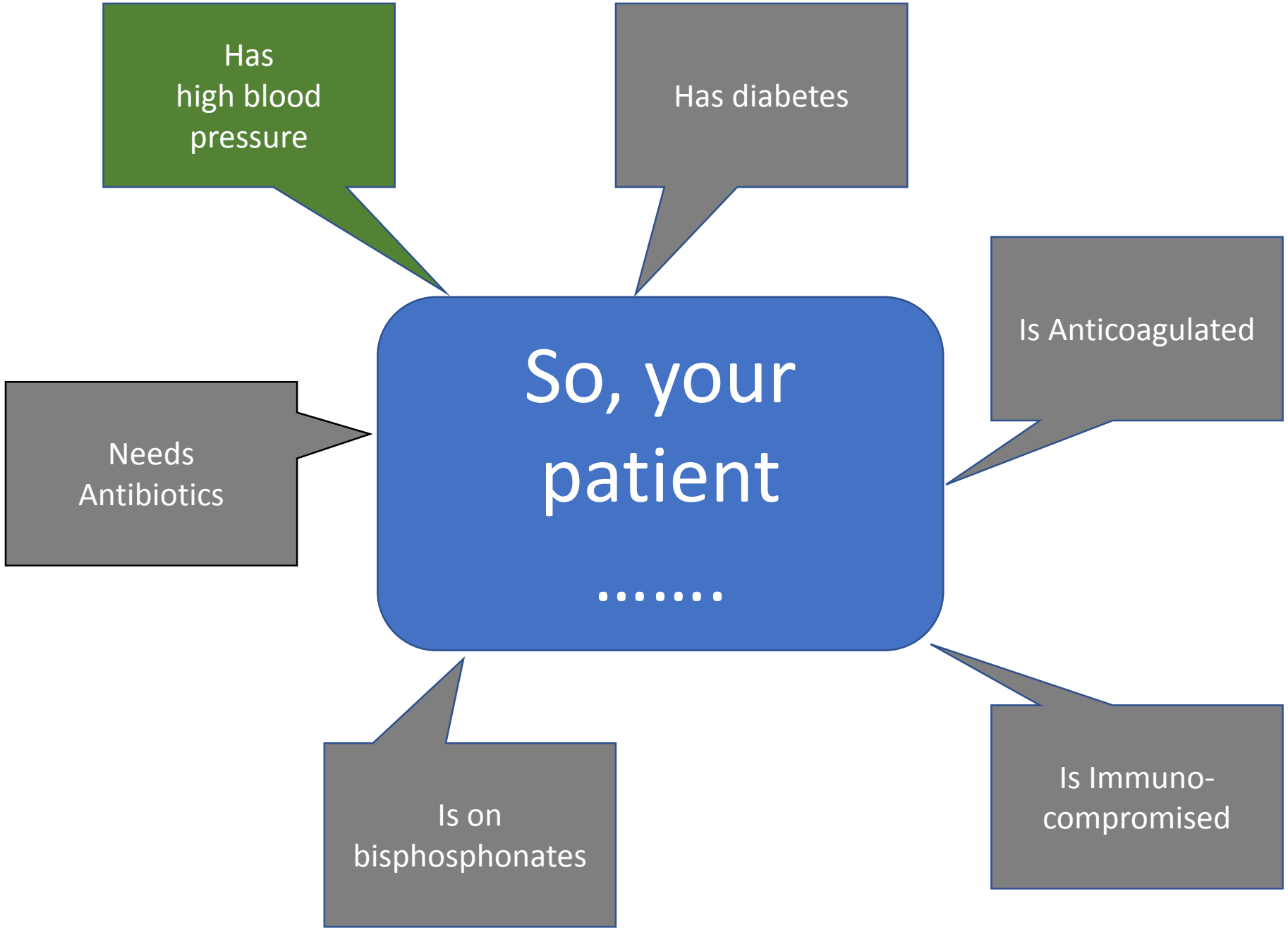
Learning Objectives

Recognize ubiquitous nature of common medical condition in general population

Discuss implications of common medical conditions on dental care of patients

Identify concerns affecting patients that would necessitate medical consultation prior to dental intervention


Has high blood pressure
Has diabetes
Is Anticoagulated
So, your patient .....
Needs Antibiotics
Is on bisphosphonates
Is Immuno-compromised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Hypertension

CHRONICALLY ELEVATED BLOOD PRESSURE >140/90

29% OF ADULTS IN US

(1 IN 3!!!!!)

ONLY 54% CONTROLLED

Elevated Blood Pressure in the office

Previously undiagnosed hypertension

Known hypertension

Chronically uncontrolled

Usually controlled, but uncontrolled today

White coat hypertension

Pain

What is “dangerously elevated blood pressure?”

Hypertensive Urgency

- SBP >180 and/or DBP >110
  - Asymptomatic
  - ?mild headache

Hypertensive Emergency

- SBP >180 and/or DBP >110
  - Altered Mental Status
  - Stroke (ischemic/hemorrhagic)
  - Acute coronary syndrome
  - Hearth failure
  - Renal failure

When to send to ER?

- SBP >180 and/or DBP >110
  - Altered Mental Status
  - Stroke (ischemic/hemorrhagic)
  - Retinopathy
  - Acute coronary syndrome
  - Aortic dissection
  - Hearth failure
  - Renal failure

Lethargy/confusion

Neurologic deficits

Blurry vision

Chest pain

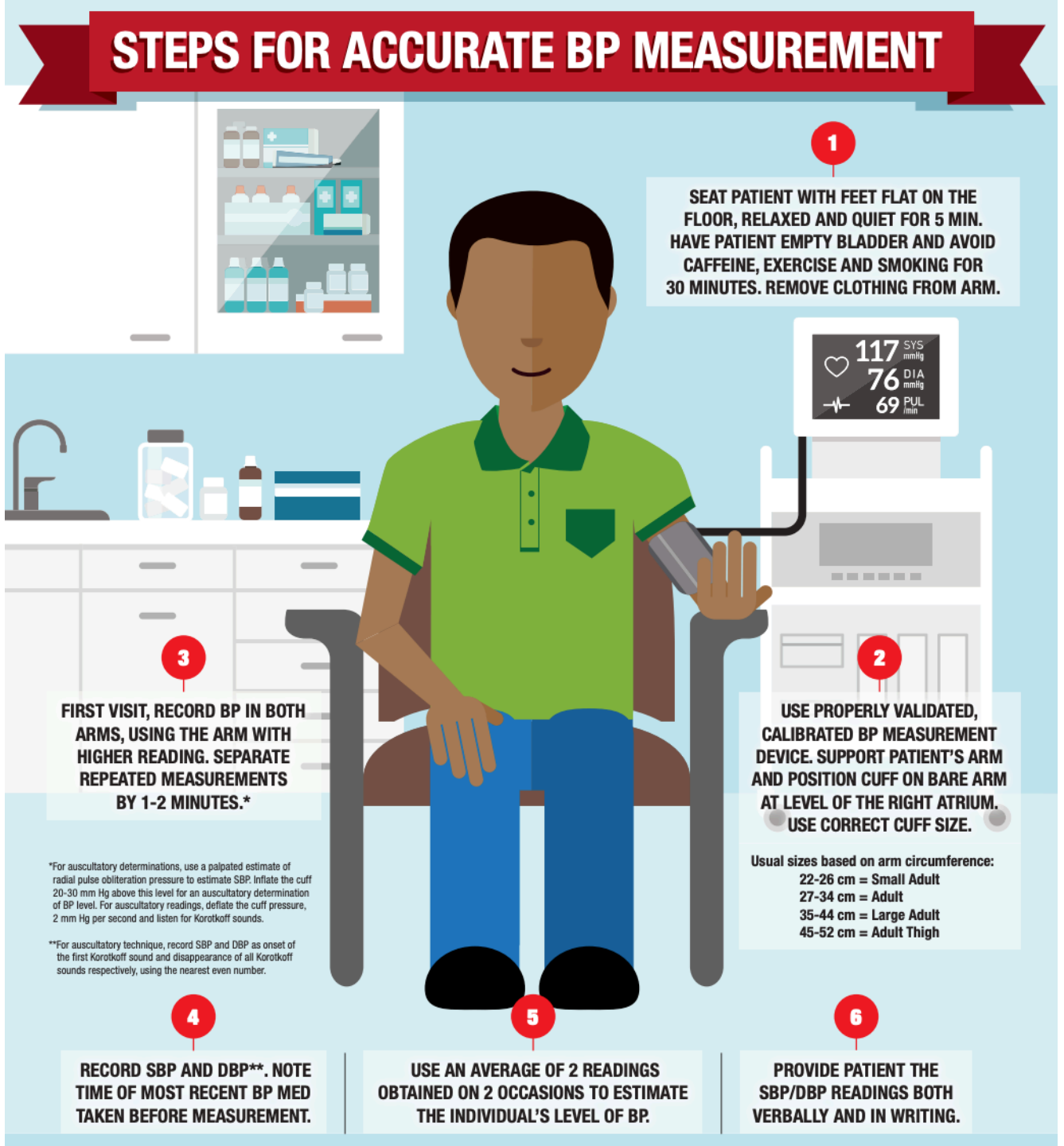
Shortness of breath

Blood in urine

What to ask your patient…

- Do you have…. (ask for “red flag symptoms”)
- Have you ever been told you have elevated blood pressure?
- Did you take your medications today?
- Do you check your blood pressure at home?
- What was your blood pressure last time you went to see your doctor?

STEPS FOR ACCURATE BP MEASUREMENT



1

SEAT PATIENT WITH FEET FLAT ON THE FLOOR, RELAXED AND QUIET FOR 5 MIN. HAVE PATIENT EMPTY BLADDER AND AVOID CAFFEINE, EXERCISE AND SMOKING FOR 30 MINUTES. REMOVE CLOTHING FROM ARM.

2

USE PROPERLY VALIDATED, CALIBRATED BP MEASUREMENT DEVICE. SUPPORT PATIENT'S ARM AND POSITION CUFF ON BARE ARM AT LEVEL OF THE RIGHT ATRIUM. USE CORRECT CUFF SIZE.

Usual sizes based on arm circumference:
22-26 cm = Small Adult
27-34 cm = Adult
35-44 cm = Large Adult
45-52 cm = Adult Thigh

3

FIRST VISIT, RECORD BP IN BOTH ARMS, USING THE ARM WITH HIGHER READING. SEPARATE REPEATED MEASUREMENTS BY 1-2 MINUTES.*

*For auscultatory determinations, use a palpated estimate of radial pulse obliteration pressure to estimate SBP. Inflate the cuff 20-30 mm Hg above this level for an auscultatory determination of BP level. For auscultatory readings, deflate the cuff pressure, 2 mm Hg per second and listen for Korotkoff sounds.

**For auscultatory technique, record SBP and DBP as onset of the first Korotkoff sound and disappearance of all Korotkoff sounds respectively, using the nearest even number.

4

RECORD SBP AND DBP**. NOTE TIME OF MOST RECENT BP MED TAKEN BEFORE MEASUREMENT.

5

USE AN AVERAGE OF 2 READINGS OBTAINED ON 2 OCCASIONS TO ESTIMATE THE INDIVIDUAL'S LEVEL OF BP.

6

PROVIDE PATIENT THE SBP/DBP READINGS BOTH VERBALLY AND IN WRITING.

White Coat Hypertension

Blood pressure is consistently elevated by the office readings but does not meet diagnostic criteria for hypertension based on out-of-office readings

15-30% of all patients with elevated office readings

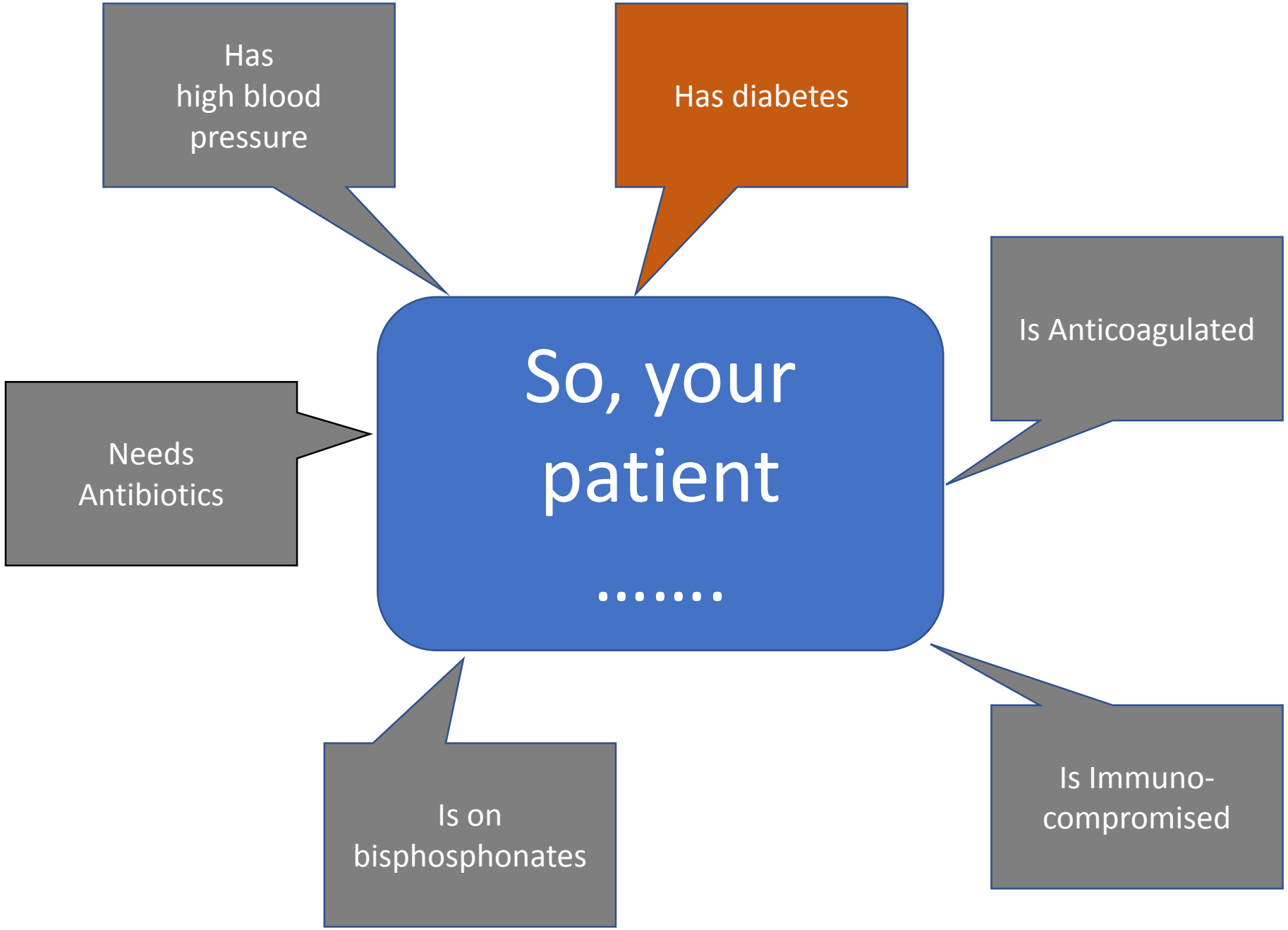
Diagnosis

In-office interval readings	Ambulatory blood pressure monitoring

So, your patient has elevated BP…

- >180/110 – ask for “red flag symptoms”
  - Present – send to ER
  - Absent – send to their primary care physician

  - Dental treatment should (probably) not be performed that day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Hypoglycemia
VS
Hyperglycemia

Who gets hypoglycemia?

PATIENTS ON INSULIN

PATIENTS TAKING
SULFONYLUREA MEDICATIONS

Medications that do NOT cause hypoglycemia

Metformin

TZDs

GLP-1 analogues

DPP4 inhibitors

SGLT-2 antagonists

Pre-procedure advice: Patients on insulin

- Long acting insulins: glargine (Lantus/Basaglar), detemir (Levimir), diglutec (Tresiba)

  continue full dose without adjustments

- Patients with insulin pumps

  continue full dose without adjustments

Pre-procedure advice: Patients on insulin

- Pre-mixed insulin: 70/30, 75/25, 50/50

  HALF of usual morning dose

- Intermediate acting insulin: NHP

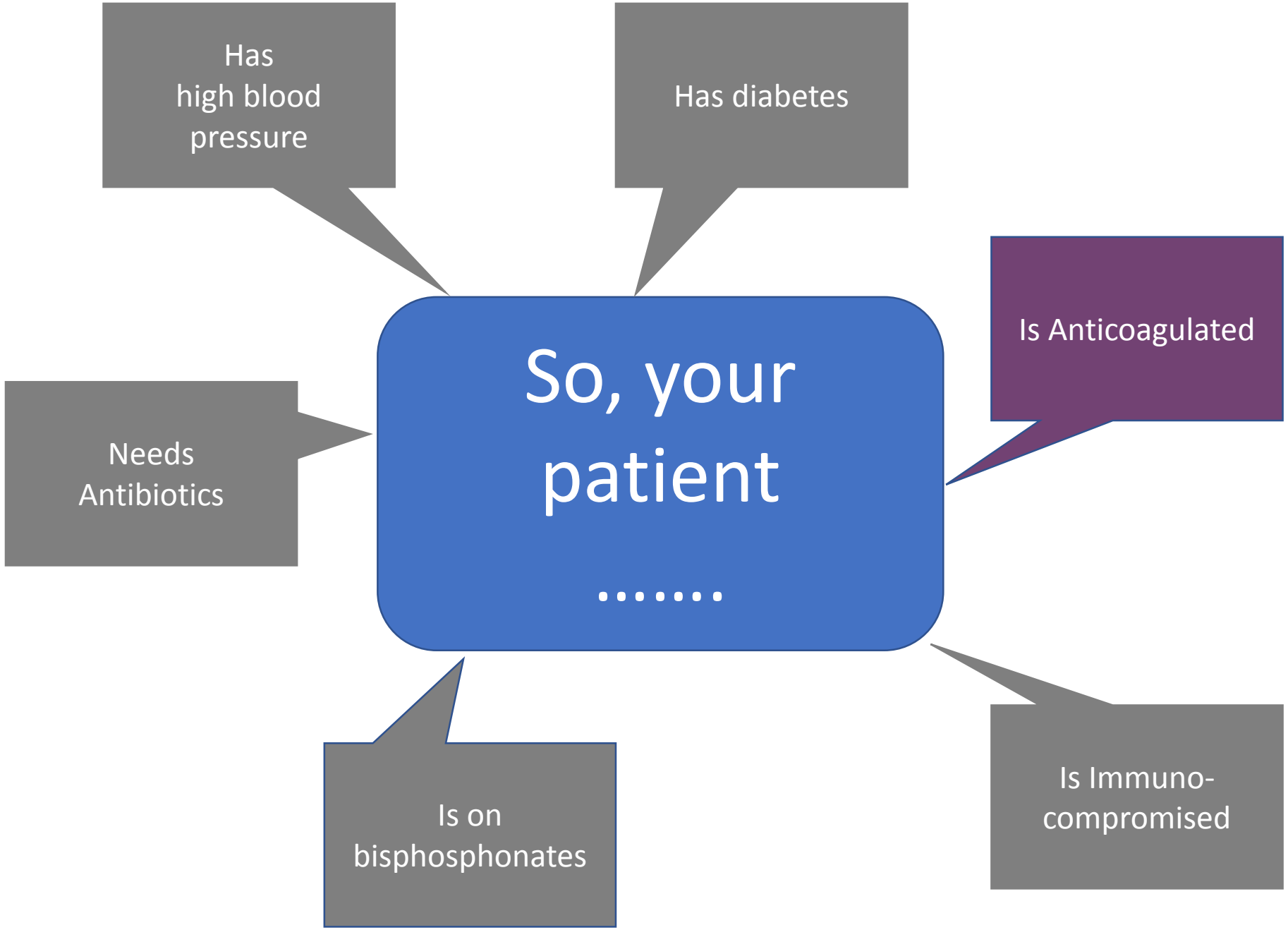
  HALF of usual morning dose

- Short acting insulins: lispro, aspart, glulisine

  NONE, unless patient is eating

What if patient is hypoglycemic?

- Glucose tablets
- Glucose gel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Anticoagulants

- Antiplatelet medications (aspirin, clopidogrel, prasugrel)
- Vitamin K antagonists (warfarin)
- Heparins (UFH, LMWH)
- Novel oral anticoagulants
  - Factor Xa inhibitors: apixaban, rivaroxaban
  - Direct thrombin inhibitors: dabigatran

Anticoagulants: indications

- Treatment of acute event
- Primary prophylaxis
  - Aspirin for heart disease, stroke prevention
  - Warfarin/NOACs for stroke prophylaxis in Atrial Fibrillation
  - Warfarin for stroke prophylaxis in patients after valve replacement
- Secondary prophylaxis
  - Heart disease
  - Strokes
  - Clots

Interruption?

MOST PATIENTS ->

CONTINUE MEDS

HIGH BLEEDING RISK ->

TALK TO THE PRIMARY CARE DOC

Coagulopathy due to other medical conditions

Chronic kidney disease

- Dialysis patients

Chronic liver disease

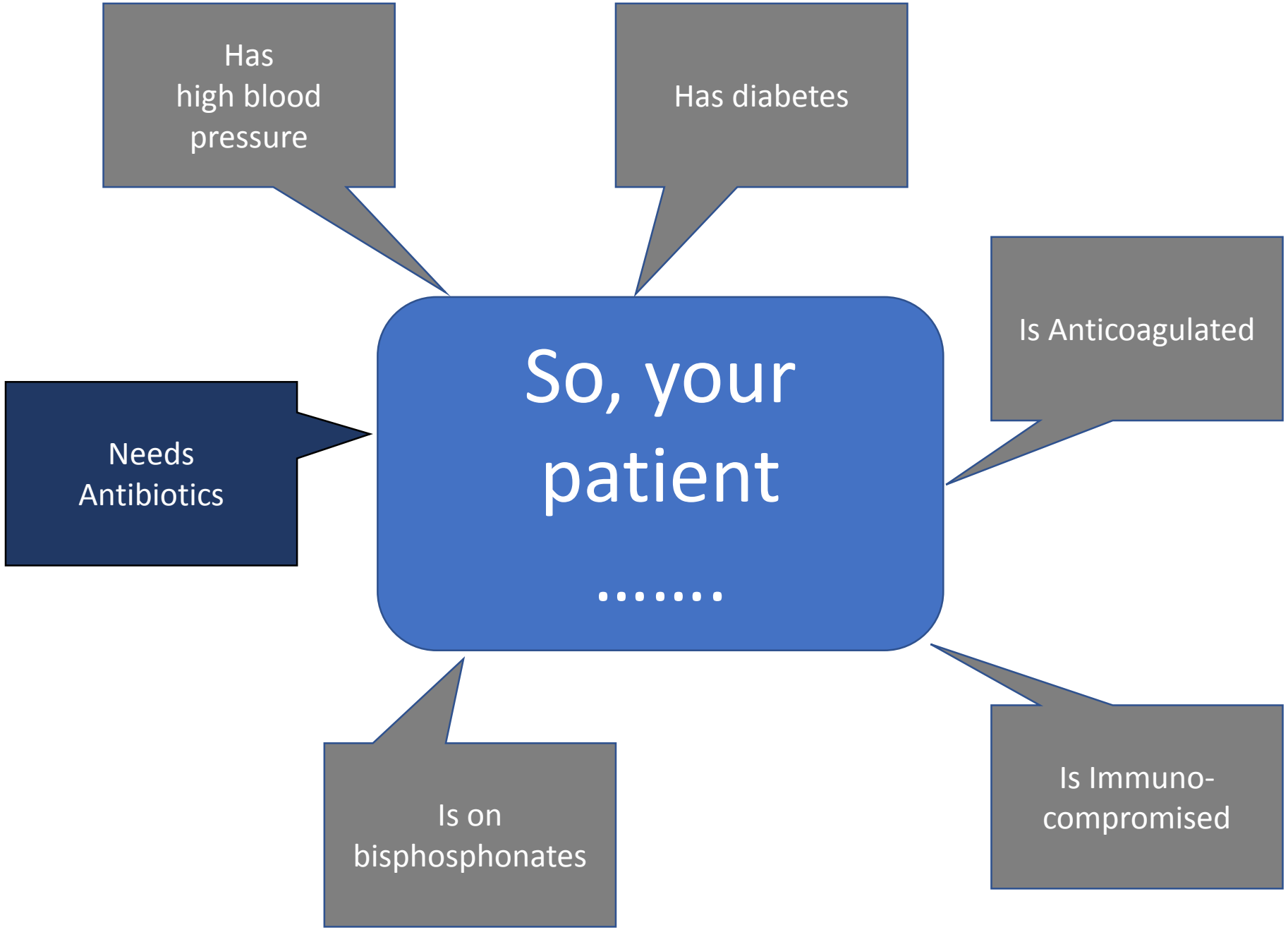
Bone marrow disorders

- Myelodysplasia
- Hematologic malignancies
- Recent chemotherapy

Hereditary coagulopathies

Autoimmune (idiopathic thrombocytopenic purpura)

Advanced heart failure (with secondary liver dysfunction)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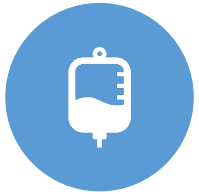
Would you consider antibiotic to prevent infections in patients with…

Prosthetic valve?

Prosthetic joint?

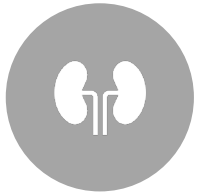
Breast implants?



Immunosuppressed?

Pacemaker?

Coronary stent?



Dialysis AV graft?

Endocarditis Prophylaxis: **YES**

- Prosthetic valves
- History of endocarditis
- Congenital heart disease
  - Unrepaired cyanotic heart disease
  - Cyanotic heart disease with repair that used prosthetic material
- Hearth transplant recipients with valvulopathy

Wilson Walter, Taubert Kathryn A., Gewitz Michael, Lockhart Peter B., Baddour Larry M., Levison Matthew, Bolger Ann, Cabell Christopher H., Takahashi Masato, Baltimore Robert S., Newburger Jane W., Strom Brian L., Tani Lloyd Y., Gerber Michael, Bonow Robert O., Pallasch Thomas, Shulman Stanford T., Rowley Anne H., Burns Jane C., … (2007). Prevention of Infective Endocarditis. *Circulation*, *116*(15), 1736–1754.

Antibiotic prophylaxis: how effective is it?

- No human study has definitively demonstrated that prophylactic antibiotics prevent endocarditis after invasive procedures
- Risk factors appear to be presence of structural heart defect, NOT the dental procedure
- Epidemiologic studies: less than 10% of IE is prevented by antibiotic prophylaxis
- Less than 5% of IE are actually preceded by a dental procedure (not a proof of causation)

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Antibiotics: what's the big deal?

development of antibiotic-resistant bacterial pathogens

C. difficile infections

Severe allergic reactions

Costs

malpractice litigation

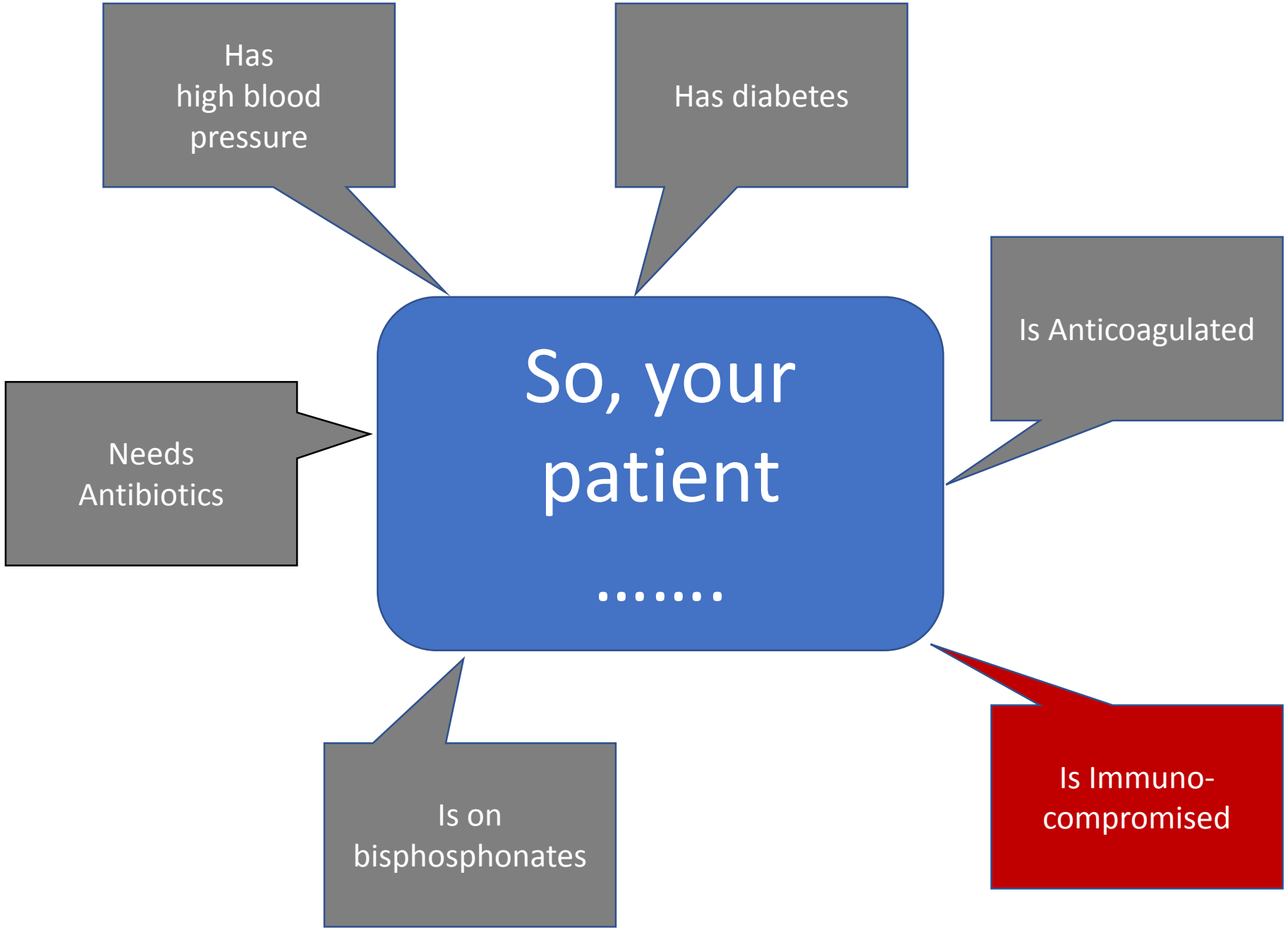
additional medical and dental office visits

Who does NOT need antibiotic prophylaxis…

- Patients with pacemakers/defibrillators
- Patients with vascular grafts, including dialysis grafts
- Patients with endovascular grafts
- Patients with coronary stents
- Patients with Vena Cava filters
- Patients with VP shunts
- Patients with breast implants
- Patients with prosthetic joints
- Pregnant patients

May need antibiotic prophylaxis…

- Immunocompromised patients?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Immunocompromised: what's the big deal?

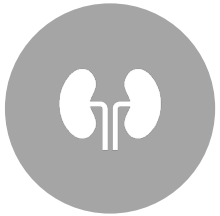
High risk of infection

Depends on degree of immunosuppression

High risk of malignancy

Immunocompromised populations

DISORDERS OF BIOCHEMICAL HOMEOSTASIS



DISORDERS OF PROTEIN LOSS

IMMUNOSUPPRESSIVE THERAPY

MALIGNANCY

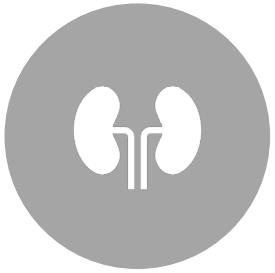
AUTOIMMUNE DISEASES (LUPUS, RHEUMATOID ARTHRITIS)

VIRAL INFECTIONS (HIV)

ASPLENIA/HYPOSPLENISM

Disorders of biochemical homeostasis

DIABETES



CHRONIC KIDNEY DISEASE/UREMIA

CIRRHOSIS

MALNUTRITION

Disorders of protein loss

NEPHROTIC SYNDROME

PROTEIN-LOSING ENTEROPATHIES

Immunosuppressive therapy

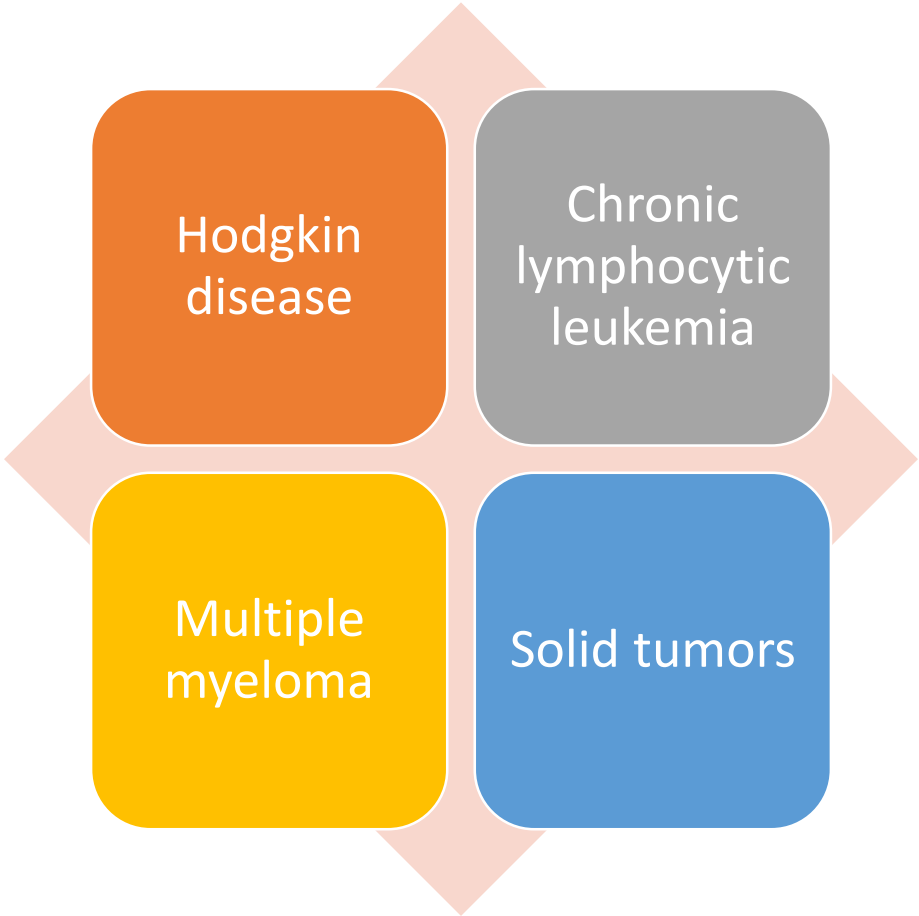
Cytotoxic chemotherapy for malignancy

Autoimmune disease treatment

Treatment of rejection after solid organ transplantation

Treatment/prophylaxis of graft-vs-host disease after bone marrow transplant

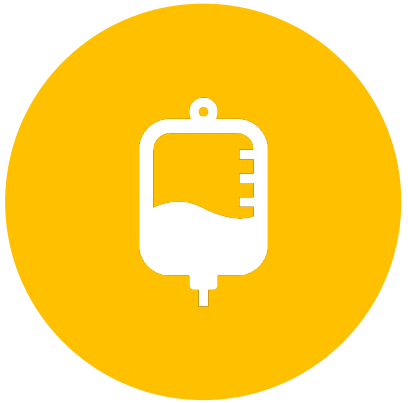
Malignancy


Hodgkin disease
Chronic lymphocytic leukemia
Multiple myeloma
Solid tumors

Immunocompromised populations

AUTOIMMUNE DISEASES (LUPUS, RHEUMATOID ARTHRITIS)

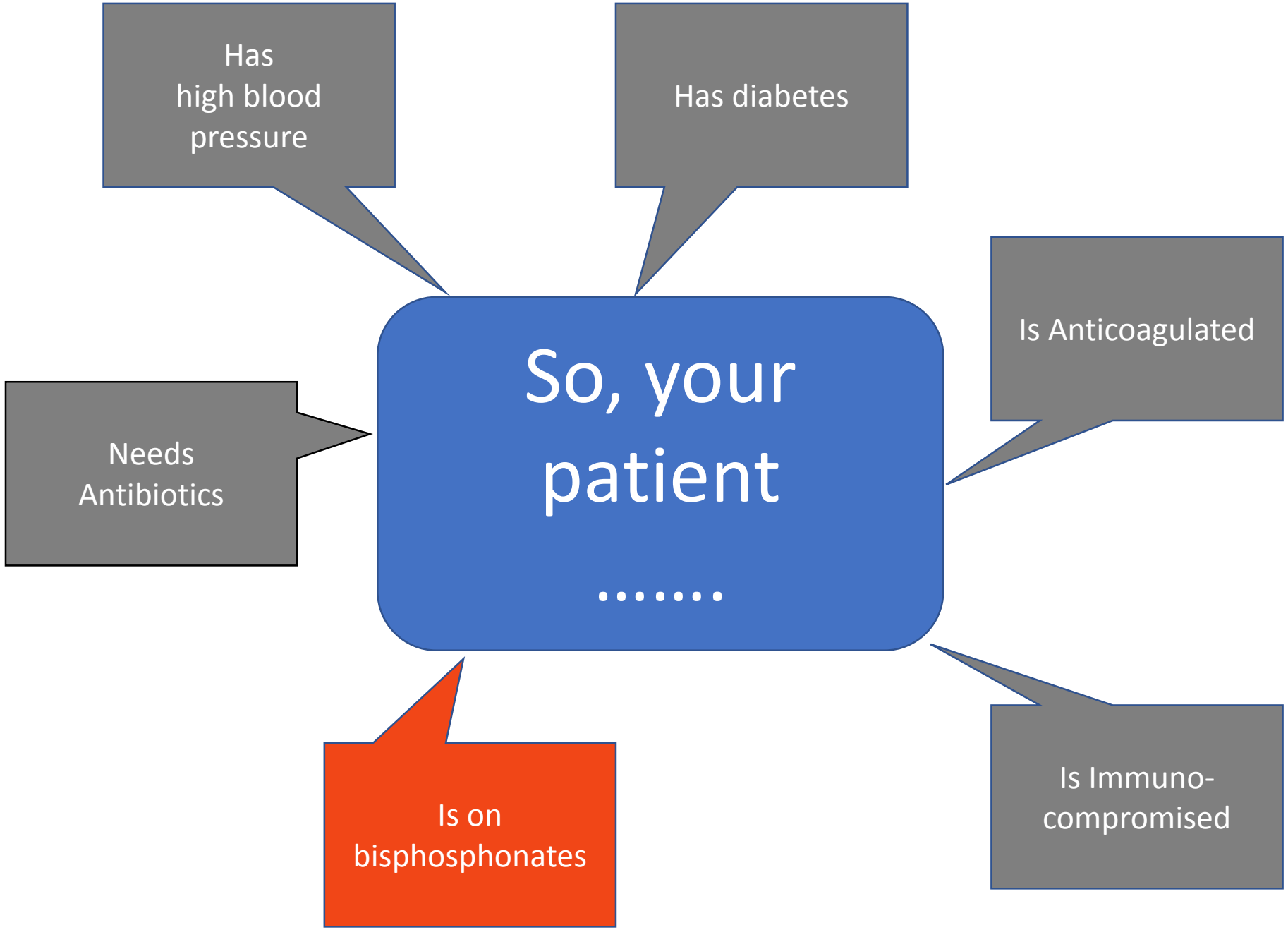
VIRAL INFECTIONS (HIV)



ASPLENIA/HYPOSPLENISM

Immunocompromised

- Do they need antibiotics before dental procedures?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Bisphosphonates: indications

- Osteoporosis
- Sometimes: Osteopenia
- Patients on chronic corticosteroids
- Paget’s disease
- Cancer patients with bone metastases

IV vs PO therapy: risks differ

Zolendronic acid vs placebo: 50-100x risk of osteonecrosis	1% (1 case per 100)
Oral bisphosphonate therapy	Short term: 0.1% (1 cases per 1000) >4 years: 0.21% (1 cases per 500)

Difference is the dose:

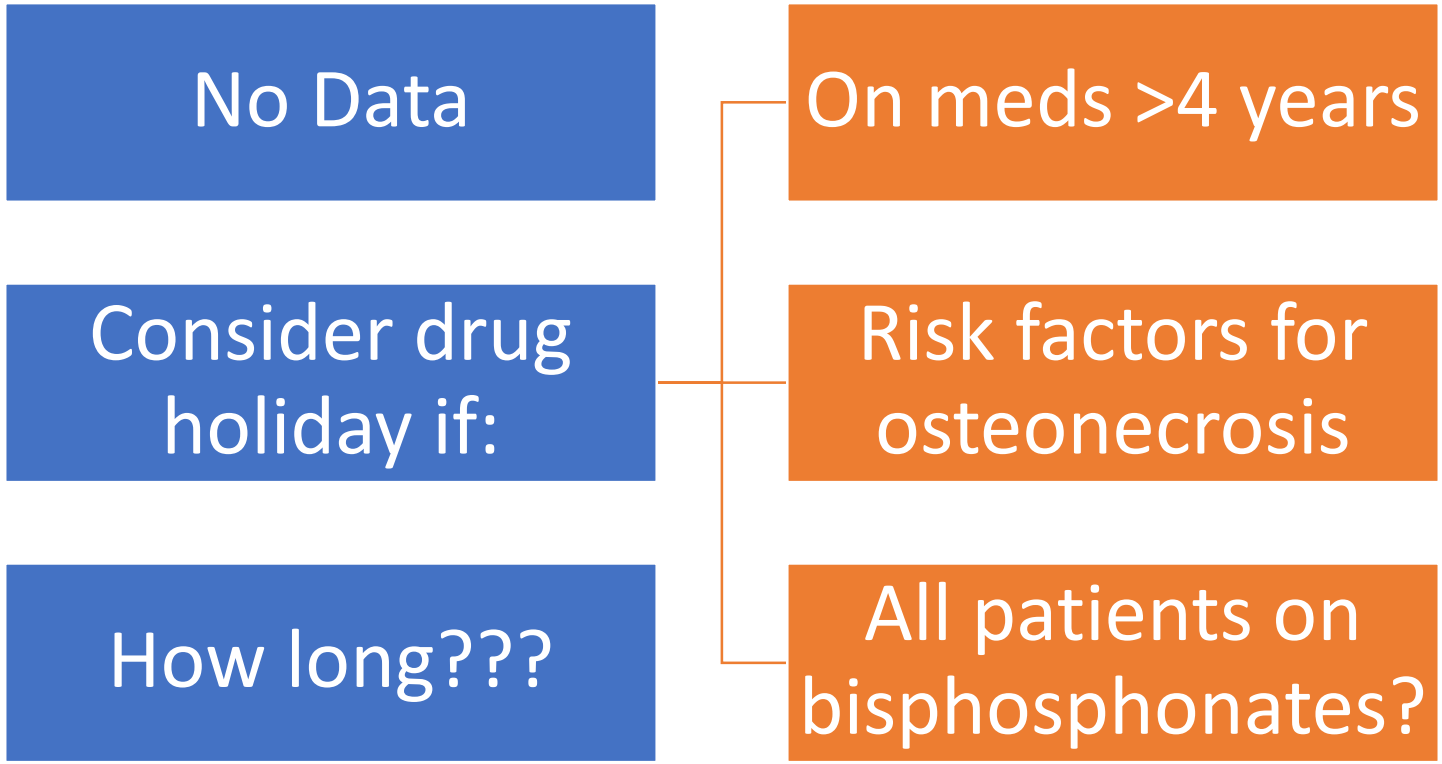
Zolendronic acid dose is 10x higher than doses of PO bisphosphonates

Drug holiday? No Data!

Recommendations:

- ADA (2011): if on meds <2 years, continue during invasive dental treatment
- ONJ Task force (2013): drug holiday if >4 years on meds or risk factors (RA, long term steroids, DM, smoking)
- AAOMS (2014)
  - Optimize dental health before IV bisphosphonates
  - PO bisphosphonates <4 years and no risk factors: no holiday
  - PO bisphosphonates <4years but with risk factors: 2mo holiday before, restart once bone heals
  - PO bisphosphonates >4years: 2mo holiday before, restart once bone heals
- AACE (2016): delay initiation until dental issues are corrected. No evidence for drug holiday, but consider.

Bisphosphonate Drug Holiday: Summary



Summary

- Incidence of chronic illness increases with age
- Many of your patients will have special considerations in their dental care
- Know how to properly check a blood pressure, and when to send to ER
- Have a source of glucose in your office
- Most patients do not need anticoagulation interruption
- Most patients do not need prophylactic antibiotics
- Incidence of osteonecrosis in patients with PO bisphosphonates is low
- When in doubt, call their primary care doctor (and have low threshold to do so)

Questions?