Appropriate Use Criteria - Decision Tree
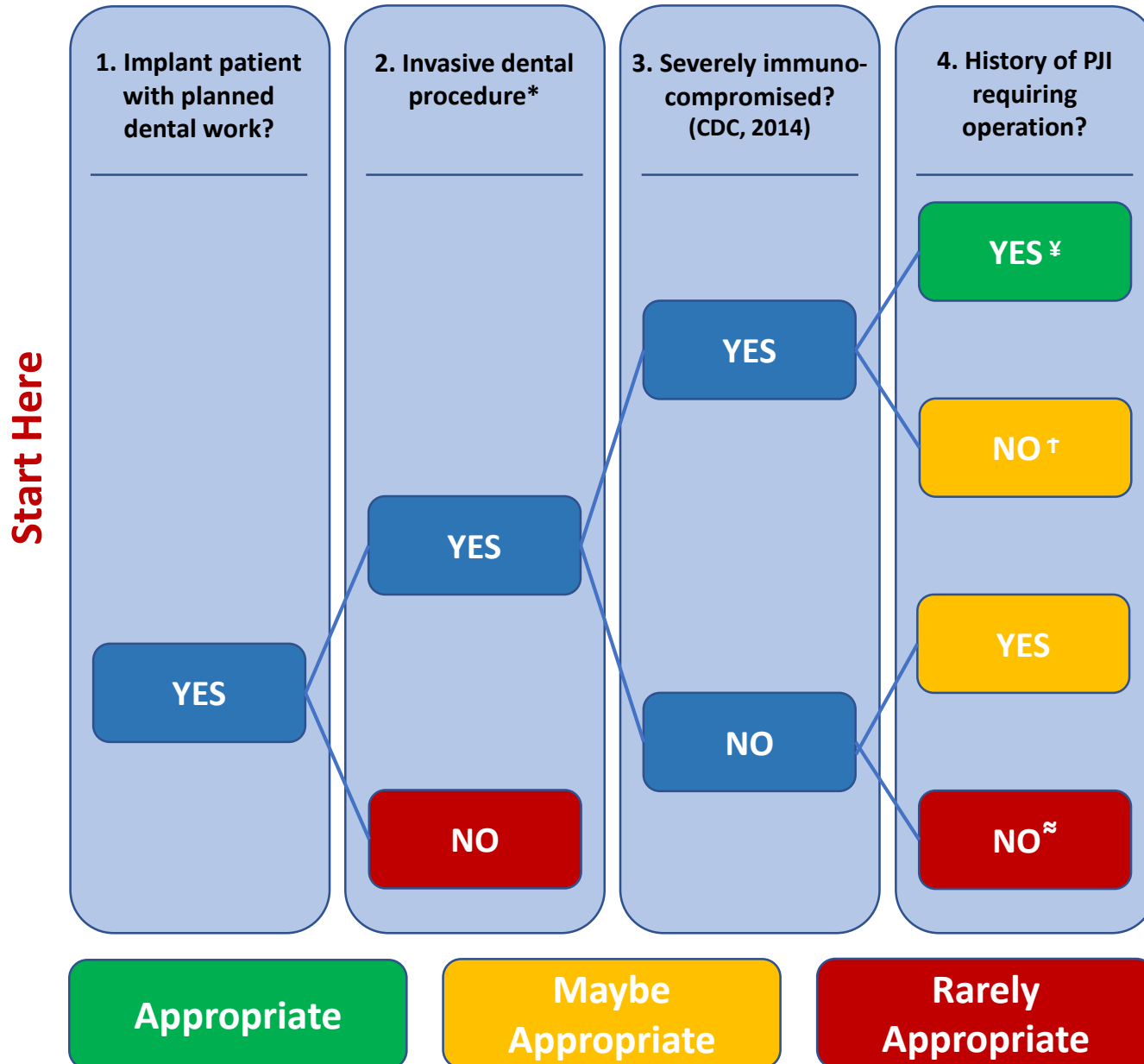
When is it appropriate to prescribe prophylactic antibiotics for patients with orthopaedic implants?

Start Here

1. Implant patient with planned dental work?

YES

2. Invasive dental procedure*

YES

NO

3. Severely immuno-compromised? (CDC, 2014)

YES

NO

4. History of PJI requiring operation?

YES ¥

NO †

YES

NO ≈

Definitions and Exceptions

* Invasive dental procedure: Procedure involving manipulation of gingival tissue <u>or</u> periapical region of teeth <u>or</u> perforation of the oral mucosa

¥ Exception:
<u>Maybe Appropriate</u> for patients with implant placement ≥1 year ago AND no/unknown diabetes diagnosis

† Exception:
<u>Appropriate</u> for patients with uncontrolled diabetes (A1C > 8 or BC ≥ 200)

≈ Exception:
<u>Maybe Appropriate</u> for patients with implant placement within the past year AND uncontrolled diabetes

This is the condensed visual of the full AUC decision tree content.

See reverse side for full list of definitions, assumptions, and references

Appropriate

Maybe Appropriate

Rarely Appropriate

We recognize that in the office setting, some specific laboratory values and other patient data are not always readily available. This also may include timely access to published scientific studies that can support clinical decision-making. Appropriate Use Criteria (AUC) specify when it is appropriate to perform a clinical procedure or service. An "appropriate" procedure is one for which the expected health benefits greatly exceed the expected health risks. Ideally, AUC are evidence-based, but in the absence of sufficient evidence, may be derived from a "consensus of expert opinion" and "accepted practice". This decision aid was derived directly from the appropriateness ratings provided by a multidisciplinary panel of clinicians and dental professionals. The interactive AUC tool can be found at www.orthoguidelines.org/go/auc

With this tool, we have attempted to define clinical situations in which antibiotic prophylaxis in certain at-risk dental patients could reduce a theoretical risk of post-surgical prosthetic joint infection. This AUC was developed as a decision support tool to facilitate the treatment of defined "high risk" and "immune compromised" patients who are on the more severe end of the clinical spectrum of disease. In the absence of readily available laboratory data or suggestive clinical suspicion, it would be reasonable to assume that most patients will fall outside of these criteria and therefore lay outside the confines of our strict definitions. As always, sound judgment should guide clinical decisions about when it may be necessary or prudent to delay a dental procedure until more information is available.

Planned dental procedure assumptions
- The chance of oral bacteremia being related to joint infections is extremely low, with no evidence for an association
- Oral bacteremia frequently occurs secondary to activities of daily living such as tooth brushing and eating
- Virtually all dental office procedures have the potential to create bacteremia

Glycemic control assumptions
- A1C scores should be recent within 3-6 months
- Acucheck spot check in dental office blood glucose level is equivalent to a patient self-report
- Blood glucose tests are assumed to be random (not necessarily fasting)

Immunocompromised status includes:
- Patient with Stage 3 AIDS as defined by the Centers for Disease Control and Prevention (CDC) Guidelines when the immune system becomes severely compromised due to reduced CD4 T lymphocyte counts (<200) or opportunistic infection as defined by CDC[8] (see list of diseases from CDC[6])
- Cancer patient undergoing immunosuppressive chemotherapy with febrile (Celsius 39) neutropenia (ANC <2000) OR severe neutropenia irrespective of fever (ANC <500)
- Rheumatoid arthritis with use of biologic disease modifying agents including tumor necrosis factor alpha or prednisone >10 mg per day. Methotrexate, Plaquenil not considered immunocompromising agents
- Solid organ transplant on immunosuppressants
- Inherited diseases of immunodeficiency (e.g., congenital agammaglobulinemia, congenital IgA deficiency)
- Bone marrow transplant recipient in one of the following phases of treatment:
    - Pretransplantation period
    - Preengraftment period (approximately 0-30 d posttransplantation)
    - Postengraftment period (approximately 30-100 d posttransplantation)
    - Late posttransplantation period (≥100 d posttransplantation) while still on immunosuppressive medications to prevent GVHD (typically 36 months post transplantation) (see Table reference below)
- Opportunistic illness in AIDS: (as per CDC[6]) Bacterial infections, multiple or recurrent

Citations:
6. CDC. Revised surveillance case definition for HIV infection—United States, 2014. *MMWR. Recommendations and Reports*. 2014;63(3):1–10.
7. CDC. 1994 Revised classification system for human immunodeficiency virus infection in children less than 13 years of age. MMWR 1994;43(No. RR-12).
8. CDC. 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR 1992;41(No. RR-17).