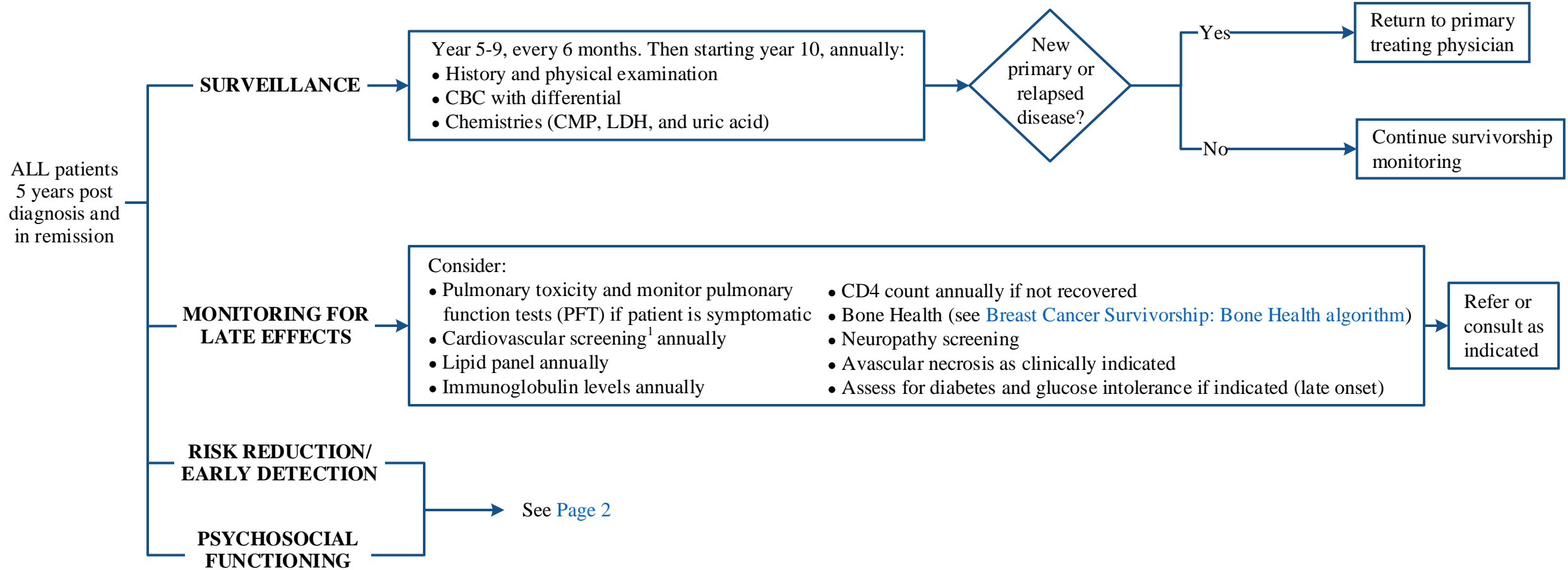


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ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

DISPOSITION



CMP = complete metabolic panel
 LDH = lactate dehydrogenase

¹ Consider use of Vanderbilt’s [ABCDE’s approach to cardiovascular health](#)

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ELIGIBILITY

CONCURRENT COMPONENTS OF VISIT

DISPOSITION

ALL patients
 5 years post
 diagnosis and
 in remission

**RISK REDUCTION/
 EARLY DETECTION**

Patient education, counseling and screening:

- Lifestyle risk assessment¹
- Cancer screening²
- HPV vaccination as clinically indicated (see [HPV Vaccination algorithm](#))
- Screening for Hepatitis B and C as clinically indicated (see [Hepatitis B Virus \(HBV\) Screening and Management algorithm](#))
- Vaccinations³ as appropriate
 - Pneumococcal vaccines PCV13 followed by PPSV23 at least 8 weeks apart. Thereafter, only PPSV23 every 5 years.
 - Influenza vaccination yearly
 - Consider one dose of tetanus-diphtheria-pertussis (Tdap) vaccine as an adult if patient has not received Tdap previously and there are no contraindications. Thereafter tetanus-diphtheria (Td) vaccination every 10 years.
 - Zoster Vaccine Recombinant, Adjuvanted (Shingrix) can be considered for patients whose last chemotherapy treatment is greater than 6 months, has a shared patient-provider conversation regarding the vaccine, and meets ACIP criteria⁴
 - Patients should inform their providers about plans to travel outside of the US at least one month in advance for appropriate counseling and vaccinations
 - Recommendations for vaccination of household members

PSYCHOSOCIAL FUNCTIONING

Assess for the following as clinically indicated:

- Distress management (see [Distress Screening and Psychosocial Management algorithm](#))
- Access to primary health care
- Vision/cataract screening (see [Cataract Screening algorithm](#))
- Financial stressors
- Relationship issues
- Infertility

Refer or
 consult as
 indicated

ACIP = Advisory Committee on Immunization Practices

¹ See [Physical Activity, Nutrition, and Tobacco Cessation](#) algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

² Includes [breast](#), [cervical](#) (if appropriate), [colorectal](#), [liver](#), [lung](#), [pancreatic](#), [prostate](#) and [skin cancer](#) screening

³ Based on [Centers for Disease Control and Prevention \(CDC\) guidelines](#)

⁴ Adults age 50 years and older with a history of chickenpox or shingles

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SUGGESTED READINGS

- Centers for Disease Control and Prevention. (2017). *Pneumococcal Vaccination*. Retrieved from http://www.cdc.gov/vaccines/vpd-vac/pneumo/default.htm?s_cid=cs_797
- Centers for Disease Control and Prevention. (2021). *Recommended adult immunization schedule for ages 19 years or older, United States, 2021*. Retrieved from <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>
- Dagnew, A. F., Ilhan, O., Lee, W.-S., Woszczyk, D., Kwak, J.-Y., Bowcock, S., . . . Oostvogels, L. (2019). Immunogenicity and safety of the adjuvanted recombinant zoster vaccine in adults with haematological malignancies: A phase 3, randomised, clinical trial and post-hoc efficacy analysis. *The Lancet Infectious Diseases*, 19(9), 988-1000. [http://dx.doi.org/10.1016/S1473-3099\(19\)30163-X](http://dx.doi.org/10.1016/S1473-3099(19)30163-X)
- Davis, A. S., Viera, A. J., Mead, M.D. (2014). Leukemia: An overview for primary care. *American Family Physician*, 89(9), 731-738. Retrieved from <https://www.aafp.org/afp/2014/0501/p731.pdf>
- Denlinger, C. S., Sanft, T., Baker, K. S., Broderick, G., Demark-Wahnefried, W., Friedman, D. L., . . . Freedman-Cass, D. A. (2018). Survivorship, version 2.2018, NCCN clinical practice guidelines in oncology. *Journal of the National Comprehensive Cancer Network*, 16(10), 1216-1247. <https://doi.org/10.6004/jnccn.2018.0078>
- Goldsby, R. E., Liu, Q., Nathan, P.C., Bowers, D.C., Yeaton-Massey, A., Raber, S.H., . . . Packer, R.J. (2010). Late-occurring neurologic sequelae in adult survivors of childhood acute lymphoblastic leukemia: a report from the Childhood Cancer Survivor Study. *Journal of Clinical Oncology*, 28(2), 324-331. <https://doi.org/10.1200/JCO.2009.22.5060>
- Hamre, H., Zeller, B., Kanellopoulos, A., Kiserud, C.E., Aakhus, S., Lund, M.B., . . . Ruud, E. (2013). High prevalence of chronic fatigue in adult long-term survivors of acute lymphoblastic leukemia and lymphoma during childhood and adolescence. *Journal of Adolescent and Young Adult Oncology*, 2(1), 2-9. <https://doi.org/10.1089/jayao.2012.0015>
- Jahnukainen, K., Heikkinen, R., Henriksson, M., Cooper, T. G., Puukko-Viertomies, L. R., & Mäkitie, O. (2011). Semen quality and fertility in adult long-term survivors of childhood acute lymphoblastic leukemia. *Fertility and sterility*, 96(4), 837-842. <https://doi.org/10.1016/j.fertnstert.2011.07.1147>
- Järvelä, L. S., Niinikoski, H., Lähteenmäki, P. M., Heinonen, O. J., Kapanen, J., Arola, M., & Kempainen, J. (2010). Physical activity and fitness in adolescent and young adult long-term survivors of childhood acute lymphoblastic leukemia. *Journal of Cancer Survivorship*, 4(4), 339-345. <https://doi.org/10.1007/s11764-010-0131-0>
- Kim, D. K., Bridges, C. B., & Harriman, K. H. (2015). Advisory committee on immunization practices recommended immunization schedule for adults aged 19 years or older: United States, 2015. *Morbidity and Mortality Weekly Report*, 64(4), 91-92. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584856/pdf/91-92.pdf>
- National Comprehensive Cancer Network (2021). *Acute Lymphoblastic Leukemia* (NCCN Guideline Version 2.2021). Retrieved from https://www.nccn.org/professionals/physician_gls/pdf/all.pdf
- Rubin, L. G., Levin, M. J., Ljungman, P., Davies, E. G., Avery, R., Tomblyn, M., . . . Kang, I. (2013). 2013 IDSA clinical practice guideline for vaccination of the immunocompromised host. *Clinical Infectious Diseases*, 58(3) e44-e100. <https://doi.org/10.1093/cid/cit684>
- Rubin, L. G., Levin, M. J., Ljungman, P., Davies, E. G., Avery, R., Tomblyn, M., . . . Kang, I. (2013). 2013 IDSA clinical practice guideline for vaccination of the immunocompromised host. *Clinical Infectious Diseases*, 59(1) 144. <https://doi.org/10.1093/cid/ciu257>
- Vanderbilt Cardio-Oncology Program. (2017). *Know Your ABCDE's*. Retrieved from <http://www.cardioonc.org/2017/08/29/know-your-abcs/>

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DEVELOPMENT CREDITS

This survivorship algorithm is based on majority expert opinion of the Leukemia Survivorship workgroup at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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