This Pediatric Annals issue is devoted primarily to pediatric rheumatology, and the issue has been capably guest edited by Dr. Melissa S. Tesher. The topics covered in the articles include several that are of real importance to primary care physicians who see children.

It’s highly probable that all physicians have been exposed during their education to the Jones Criteria for the diagnosis of acute rheumatic fever (ARF), but I suspect few know the origin of these criteria and more importantly that there has been a recent significant revision.1 T. Duckett Jones presented his original set of criteria at a meeting of the Pediatric Section of the American Medical Association in Chicago in June 1944.1 The major and minor criteria have been modified and revised several times since then by a committee of the American Heart Association (AHA)—it has not been updated since 1992 until just a few weeks ago.2 I was privileged to participate in the recent deliberations as well as the previous Jones Criteria modification in 1992.

Even though ARF has decreased substantially in frequency in the US and Western Europe over the past decades, this diagnosis still needs to be considered in some patients, and in other countries ARF remains a major cause of serious valvular heart disease with substantial morbidity and mortality in teens and young adults.3 The dramatic modifications in the 2015 Jones Criteria include: (1) acceptance of echocardiographic evidence of significant mitral and/or aortic valve regurgitation even in the absence of a typical murmur as evidence of carditis and (2) defining low-risk populations and those that are moderate to high risk for ARF and rheumatic heart disease (RHD) as well as establishing somewhat different Jones Criteria for these two different sets of populations. The latter change is designed to make it somewhat easier to diagnose ARF in those moderate to high-risk populations with substantially higher pretest probability for ARF on clinical presentation. This means, for example, that a child with fever and polyarthritis in India has a greater probability of having ARF than a child in a low-risk population with the same clinical features.

The ability of Doppler echocardiography to diagnose valvulitis in ARF, even in the absence of a murmur (so-called silent or subclinical valvulitis/carditis), has been demonstrated in more than 25 studies, particularly from areas with ongoing moderate to high rates of ARF and RHD.1,2 Strict definitions of the required echocardiographic features that distinguish physiologic (“mild,” “trivial”) from pathologic degrees of valve regurgitation have been spelled out in the 2015 revision. When appropriate, each of us who relies on echocardiographic reports from our consultant cardiologists should verify that they are using the required echocardiographic features set forth by the AHA and the World Heart Federation.1,2 These spell out the technical issues such as the length and peak velocity of the regurgitant jet assessed by Doppler.

The second set of changes in the 2015 revision addresses requirements to fulfill the arthritis/arthralgia major and minor criteria and to fulfill a few other minor criteria. In low-risk populations, polyarthritis is required to meet the major arthritis criterion and polyarthralgia to meet the minor criterion. In moderate to high-risk populations, polyarthritis or monoarthritis or even polyarthralgia

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is sufficient to meet the major criterion, with monoarthralgia meeting the minor criterion. Other differences in the minor criteria relate to fever, defined as >38.5°C in low-risk populations and >38°C in moderate to high-risk populations, and to the required degree of the erythrocyte sedimentation rate elevation, defined as >60 mm per hour in low-risk populations but >30 mm per hour in moderate to high-risk populations. The rationale for these changes derive from experiences in high-risk populations of Australia (Aborigines), New Zealand (Maoris and Pacific Islanders), and elsewhere in which patients who failed to meet the 1992 Jones Criteria and thus were not treated with prophylaxis to prevent secondary attacks of ARF went on to develop significant RHD.

**THIS MONTH’S STAMPS**

The stamps selected to accompany this column relate to Sir Alexander Fleming’s discovery of penicillin, used to prevent recurrent ARF (among many other usages), which has been deemed one of the top medical discoveries of the 20th century. The yellow and green 1999 stamp from the United Kingdom shows colonies of penicillin close-up, and the 1993 Transkei stamp portrays Fleming with Sir Howard Florey (1898-1968), who solved the problem of stabilizing and then mass producing penicillin over a decade after Fleming’s original discovery in 1928. The green and red 1978 stamp from Gabon celebrates the 50th anniversary of Fleming’s discovery and shows the chemical formula and crystal structure of penicillin. Lastly, the colorful stamp from Gabon shows Fleming in a serious pose.

Fleming, Florey, and the emigré chemist Ernst Chain shared the 1945 Nobel Prize in Medicine for their work on penicillin, which truly transformed medicine. After his 1928 discovery, Fleming was stymied in his efforts to isolate and purify penicillin because it was so unstable and fleeting in its antibacterial effect. He had abandoned his efforts by the late 1930s when his and others’ attention shifted to the then new “miracle” sulfa agents. Ironically, Fleming was publishing papers on the effects of the newer wonder-drug, sulfapyridine, in *The Lancet* at the time that Florey and others in Oxford made the breakthroughs that enabled clinical testing of penicillin, which of course proved penicillin’s superiority.

**REFERENCES**