High active antiretroviral therapy (HAART) has dramatically reduced mortality and morbidity among people living with HIV and AIDS globally. However, drug resistant mutations of HIV are a great challenge to the benefits of HAART. Development of drug resistance to antiretroviral medication can occur in persons on antiretroviral therapy, by acquisition of an already resistant strain in persons who have never taken medication or by natural polymorphism of the virus in vivo. This leads to treatment failure hence complicating management of HIV patients. With the introduction of generic HAART, there has been a steep increase in the number of patients put on HAART in Kenya but this has not reached anticipated 100% coverage. Therefore, most patients either pay for medications out of their own pockets or fail to access completely. Interruptions in therapy due to monetary constraints are not uncommon. Little is known on HIV drug resistance in resource constrained settings like Kenya where the predominant circulating HIV-1 subtype is A1. The transmissibility of drug-resistant forms of the virus is also a major concern especially when formulating treatment guidelines. This article reviews published data available on the patterns of HIV-1 drug resistance among drug naive population in Kenya