Letter of Medical Necessity

Date

Re: …. Subscriber:

DOB: … ID#:

This is a letter of preauthorization of TSC molecular testing for my patient ……….. … is 2 weeks old and was prenatally diagnosed with multiple cardiac tumors, which are most consistent with rhabdomyomas (**ICD-10: D21.9**). There were no TSC (tuberous sclerosis complex) skin findings on physical examination, but this may be due to his young age. Multiple intracardiac rhabdomyomas is suggestive, but not diagnostic, for Tuberous Sclerosis Complex (**ICD-10: Q85.1**); approximately 90% of individuals with this presentation have TSC, even though it usually can’t be clinically confirmed until other manifestations arise with age.

Tuberous sclerosis complex (TSC) involves abnormalities of the skin (hypomelanotic macules, facial angiofibromas, shagreen patches, fibrous facial plaques, ungual fibromas), brain (cortical tubers, subependymal nodules, seizures, mental retardation/developmental delay), kidney (angiomyolipomas, cysts), and heart (rhabdomyomas, arrhythmias). CNS tumors are the leading cause of morbidity and mortality, while renal disease is the second leading cause of early death.

Two [genes](http://www.genetests.org/servlet/access?qry=66&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) are known to be associated with tuberous sclerosis complex: *TSC1* and *TSC2.* We are requesting preauthorization for DNA testing of the *TSC1* and *TSC2* genes for confirmation of the diagnosis of Tuberous sclerosis complex and for medical management decision-making.

…. is currently being followed closely by Cardiology. If his cardiac masses do not regress as is the natural history of most TSC-related rhabdomyomas, an MRI and/or biopsy would be needed. If a *TSC* mutation is identified, this would confirm that the masses are rhabdomyomas, and avoid the need for sedation and the costs of the MRI.

As more genotype/phenotype data available, the importance of molecular testing for patient care is emerging. For example, it appears that *TSC1* [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) produce a less severe [phenotype](http://www.genetests.org/servlet/access?qry=156&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) than *TSC2* [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame). The exception is that some missense *TSC2* [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) are associated with milder disease [phenotypes](http://www.genetests.org/servlet/access?qry=156&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame). Other genotype/phenotype correlations include a greater risk of renal malignancy in individuals with [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) in *TSC2*, and a higher frequency of mental retardation, autism, and seizures in individuals with [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) in *TSC2*. Renal cysts occur in individuals with the certain *TSC1* [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame), small *TSC2* [mutations](http://www.genetests.org/servlet/access?qry=139&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) (single to few [base pair](http://www.genetests.org/servlet/access?qry=17&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) [insertions](http://www.genetests.org/servlet/access?qry=99&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame), [deletions](http://www.genetests.org/servlet/access?qry=38&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame), and point mutations) and a [contiguous gene syndrome](http://www.genetests.org/servlet/access?qry=32&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) involving large [gene](http://www.genetests.org/servlet/access?qry=66&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) [deletions](http://www.genetests.org/servlet/access?qry=38&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) and [rearrangements](http://www.genetests.org/servlet/access?qry=234&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) of both the *TSC2* [gene](http://www.genetests.org/servlet/access?qry=66&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) and the *PKD1* [gene](http://www.genetests.org/servlet/access?qry=66&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) that are close together on [chromosome](http://www.genetests.org/servlet/access?qry=23&db=genestar&fcn=term&gtreport2=true&id=8888891&key=Qp3x-bqnQyibN&format=frame) 16p13.

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| The blood for the testing would be drawn at …… and sent to …..LAB (test #....), CPT codes are: ….. and …... Identifying a specific mutation would allow us to focus our medical management and interventions as well as provide testing for Seth’s parents and other at-risk family members. TSC is an autosomal dominant condition with a 50% recurrence risk in affected individuals. Because of the very wide clinical spectrum, it is sometimes difficult to identify an affected individual without having the DNA testing.  |
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If you have any questions, please feel free to contact me.

Sincerely,