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**Title:** An Open-Source Informatics Management System and Community for the National Children's Study

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### **Abstract**

The Arkansas Study Center has adapted and integrated several software applications into a comprehensive Informatics Management System (IMS) to meet the needs of the National Children's Study. All components of the IMS are open source, and we share all our software modifications and other resources, including instrument implementations, with the NCS community. Links to download software, documentation, instrument implementations, and other resources are at <http://code.google.com/p/ncs-open>. All resources are freely available without obligation or registering at the site. The components of the IMS include: (1) caBIG Central Clinical Participant Registry (C3PR) for participant registration, collection of address and demographic data, and management of consents, consent versions, and consent signing data; (2) LimeSurvey for conducting NCS instruments and collecting numerous operational data elements; (3) a data warehouse for collating data from other applications and submitting all data to the Vanguard Data Repository (VDR); (4) Talend for extract, transform, and load (ETL) processes in the warehouse including formatting data into the VDR schema; (5) Open sYSTEM for Entity Resolution (OYSTER) for resolving duplicate address records; and (6) our own portal based on LifeRay open-source software that gives users a single point of access to all applications as well as implements single sign-on. We plan to use the open-source Patient Study Calendar for tracking study activities and the open-source caTissue Suite for managing biological and environmental specimens.