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## 1 General Comments

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**The envisioned NC HIE Core and Value-Added services model described by the State in its RFC will deliver value to the residents and care providers in the State. To help ensure that the State meets its goals and objectives in both the short- and long-term, we recommend the definition of a more comprehensive set of requirements to establish NC HIE as a financially sustainable business.**

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NC HIE is a non-profit business incorporated within the State of North Carolina. To fulfill the mission of the NC HIE, it is essential that the organization be based on a sound business model and supported by business system services that extend beyond what has been articulated to-date.

As part of the business model, it is essential that NC HIE stakeholders consider the business services offered by NC HIE as valuable. Understanding and confirming stakeholder value would be best represented in clear monetary values being attributed to each Core and Value-Added service. These values would then be the basis for reimbursement on usage, subscription, and/or hybrid payments. The delivery of such a comprehensive set of business services and supporting systems goes beyond the current set of requirements.

## 2 Current HIE Capabilities

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**Capgemini is currently developing and operating a HIE for health messaging services for laboratory results, ePrescribing, medical history, and other related health information services.**

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### 2.1.1 HIE Platform Currently in Use or Development

Capgemini is actively involved in the implementation and ongoing operation of an innovative, financially sustainable HIE business model. The HIE enables the sharing of patient data between medical services providers including hospitals, primary care providers, laboratory providers, and pharmacies. This HIE environment is being run within a reusable business mode (a managed business service) in which Capgemini made a capital expenditure investment in the HIE services and is compensated based on usage of these services (i.e., transactions). In addition, Capgemini is contracted to be the facilitator for care innovation across the care community.

The exchange of medical and logistical information regarding patients is helping the region to improve the quality, efficiency and effectiveness of care. A more efficient and effective healthcare ecosystem is less costly than an ecosystem in which only paper based patient records are maintained. In the next wave, we will add patient portal capabilities to the ecosystem, giving patients the ability to interact with their care providers and improve self-help.

### 2.1.2 Exchanging Data

Current core services include:

- Central referral index, with links to all federated health care providers systems containing medical records for patients in this region.

- Central care provider database, used for authentication of health care professionals, and the roles they can have in the healthcare messaging processes.
- Central patient consent index, stating the patients consent to health care professionals to make use of the HIE to obtain their medical information when needed.
- Core messaging, logging, usage reporting, for security and management purposes.
- No central storage of medical data, files or dossiers. All medical data remains in the federated, local health care providers systems. All medical content is encrypted when sent in a message.
- Healthcare services are developed and delivered using messages, based on (international and open) standards including HL7v3, IHE-XDS, EDIFACT.
- Health messaging services include patient referrals, patient transfers, medication overviews (across multiple pharmacies), ePrescriptions, laboratory orders, lab results and lab overviews (across multiple labs).

#### Profile of the health community:

- 350 General Practitioners.
- 100 Pharmacies.
- 20 Home Care and Nursing Home Organizations.
- 3 General Hospitals, 1 Mental Hospital, and 1 Rehabilitation Clinic.
- 2 Health Insurers (50% market share).

### 3 Additional Comments

**It is Capgemini's belief that NC HIE should focus on future procurement activities and obtaining the services necessary to establish both a financially sustainable business model and the associated enterprise business systems that will help ensure long-term viability of the envisioned clinical services.**

Capgemini has carefully considered the specific attributes of, or expected requirements for, HIE services at the state and local government. This section presents our recommendations.

**1) Clinical functions.** The architecture should remain open to facilitate the addition of new care information services between care providers as well services that are patient/care giver focused.

**2) Core and value-added HIE services.** The NC HIE Transformation Services will likely need to be coupled with provider registry services (e.g., an extension of the Provider Directory) that includes specifics about the provider system message interpretation capabilities (i.e., the messaging and terminology standards understood by the registered provider EMR system(s)).

**3) Data exchange.** Not applicable.

**4) Statewide HIE requirements.** Not applicable.

**7) Financially sustainable NC HIE business.** While it is easy to say that a sustainable business model should be the first major NC HIE milestone, it is a significant task to accomplish. The NC healthcare ecosystem is extremely complex, with a wide range of organizations and individuals actively involved in the patient's care journey, as well as the reimbursement for services provided. To address these

complications, we recommend a highly structured and highly collaborative approach to help achieve a sustainable HIE business model before major investments in HIE system investments and contractual obligations. Relatively minor investments can be made in reusing current infrastructure to deliver 2011 **meaningful use** commitments. Key elements of our recommendations include:

1. **It's not just about technology.** Resist the temptation to buy a HIE technology solution without getting the business model defined and agreed upon. Consider the users of the HIE, the value they will accumulate, and the costs of ownership, as well as cost being absorbed by stakeholders when establishing the business model and determining supporting revenue streams.
2. **Design HIE payments on value.** Design the HIE reimbursement/incentives and governance within the health community first and foremost, engineering sustainability at the beginning of the initiative. Focus on transaction-based valuation estimates that recognize the value chain for each transaction type (i.e., the payment for the transaction may come from the sender, the receiver, or even a third party depending on who realizes the net value).
3. **Partner for delivery.** Utilize the HIE reimbursement model as the core to a public/private partnership engagement model, where the HIE service provider is compensated on usage and future innovation of the services.
4. **Minimize duplicative infrastructure.** Formulate a delivery model approach that reduces duplicative HIE infrastructure costs across the State:
  - Community HIEs/RHIOs have their own infrastructure, which can be duplicative of State infrastructure investments.
  - Look to provide infrastructure services to community HIEs/RHIOs as a way to reduce costs while enabling the community to retain an independent set of HIE services (e.g., cloud computing).
  - Recognize that an infrastructure reduction approach may require a long-term, phased approach—migrate to shared services after adoption.
5. **Deliver value early.** Identify and design data access and management approaches that can make the HIE a productive tool for care delivery (e.g., pre-populate with representative health records formulated from claims and attachment data).
6. **Make a difference to individuals.** Support patient-centric services that make a difference for high risk populations. The utilization of monitoring transactions (e.g., chronic disease surveillance and management) offers opportunities for improved preventative care services, improved wellness, and reduced care costs.
7. **Integrate for person centricity.** Look for opportunities to integrate across other State-run social services, such as Medicaid, housing, WIC, the Children's Health Insurance Program, food stamps, and unemployment, with the objective of increasing the value of the HIE investment for more comprehensive, patient-centric healthcare services.
8. **Procure independent, third party project oversight.** Minimize delivery risk as part of the overall implementation of the Core Services and future Value-Added services with the addition of a strong Project Management Office (PMO) that incorporates robust quality management and quality controls.