Thought Paper

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ENABLING BPCI THROUGH TECHNOLOGY

USING DATA TO IMPROVE CARE AND REDUCE COSTS

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BPCI: The Onset of Opportunities

Bundled Payment for Care Improvement (BPCI) is an initiative that promises to positively transform care delivery based on financial innovation. Unlike fee-for services models, it provides incentives for participants to provide more coordinated and holistic care, reducing service redundancies and their associated costs by encouraging caregivers to take a closer look at each patient's entire continuum of care. A successful BPCI model relies on close coordination between the participants, which means risk bearing provider organizations will need to embrace the growing role of technology as an enabler.

Launched in 2013, the Bundled-Payment model has since gained traction with Post-Acute Care (PAC) Providers and Payers as it aligns their incentives across all treatment settings for an episode of care. Centers for Medicare and Medicaid Services (CMS) are targeting 2018 as the year when 50% or more of payments to Post-Acute Care providers will be in the Bundled -Payments model. CMS recently announced that 232 provider organizations consisting of acute-care hospitals, skilled nursing Facilities (SNF), physician group practices, Long Term Care Hospitals (LTCHs), and Home Health Agency (HHAs) have entered into BPCI agreements. It is interesting to note that two of the four bundled-payment models currently initiated include post discharge services, making this the largest bundling project involving PAC services to-date.

Integrated Care Delivery is where PAC providers engage and make a difference within BPCI models. Therefore, PAC providers participating in BPCI – from both acute and post-acute perspectives, need to switch from a stand-alone delivery mode to a delivery model that is more coordinated and integrated across the care continuum.

Achieving this requires not only a shift in how Providers look at patient care, but also a shift in the systems being used administratively support them. These systems can provide endless information, but if desired cost savings and clinical outcomes are to be achieved, BPCI contracted organizations must focus on the data and outcomes around the following opportunities and drivers:

- Reduce length of hospital stay
- Reduce hospital readmission rates
- Improve the quality of the post-acute care experience
- Improve care coordination

So what do PAC providers need to achieve more favorable health outcomes? How do they leverage technology as a part of their overall BPCI roadmap? This paper discusses technology solutions that Acute and Post-Acute Care organizations should consider as enablers for a successful BPCI initiative.

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Achieving BPCI Objectives: Fundamental Considerations

In any organization, bringing together multiple organizations for a single goal requires integration to ensure proper understanding of business process and communication of outcomes. For Acute and Post-Acute-Care organizations, coordination and collaboration at every step of care delivery is critical to achieve a successful BPCI program. For instance, information access and close coordination between PAC providers and hospitals throughout the care cycle will ensure quality of follow-up care, eventually helping reduce the rate of readmissions during the post-acute care phase and ultimately providing better patient care at a lower cost.

Information gathering and coordination required by the participants engaged in a BPCI initiative could be grouped into three categories:

Category 1: Care Design

Acute care providers require a deep understanding of PAC Care design, data and analytics. A contextual foresight will help acute care providers to align coordination channels with greater purpose and efficiency. To be able to drive BPCI goals, hospitals must have access to the following key aspects of post-acute care:

- Historic PAC care planning, outcome data and analytics on each of the bundles across risk categories
- Post-acute care processes for care and patient engagement and information available at each step of these processes
- Partnership method for smoother transition and patient follow up

Category 2: Care Coordination

Similarly, to contribute meaningfully to care coordination, PAC organizations participating in BPCI must be well versed at the following:

- Monitoring patient vitals, experience and clinical outcomes from acute care to achieve the below objectives:

  Dynamically altering PAC care path and identifying appropriate care settings

  Reducing the length of hospital inpatient periods

  Understanding patient risk and ensuring better PAC readiness for transition
- Monitoring and conveying vitals and patient statuses back to acute care facilities so readmission can be averted thorough timely interventions.
- Sharing real time or near real time data analytics from care plans used based on the PAC care design for coordinated episodic care

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Category 3: Patient Engagement

Both PAC and acute care organizations must possess fair knowledge and experience in engaging with patients on a continuous-basis to gather information on the following:

- Adherence to medication to ensure medication management
- Adherence to clinical outcomes, patient's life style, care and rehabilitation plan
- Patient vitals and alerts, if any, to care providers
- Coach lifestyle to avoid future episodes requiring Acute and Post-Acute care

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Technology Solutions: Enablers for Successful BPCIs

Once information is gathered from the three major areas referenced above, it needs to be formatted in a matter that can be shared across all contracted stakeholders. Information systems currently used by care managers and agencies, for planning and monitoring care delivery, are largely customized to their current operational settings and therefore not structured to meet this objective. To achieve better cost modeling of episodic care, hospitals and PAC providers must invest in and leverage information systems to consolidate data sources and make crucial health data available.

Acute and Post-Acute care organizations signing up for BPCI need to ensure Providers are fully conversant with the episodic pricing, contract terms, rewards and associated penalties for any defaults. For providers, it is critical they have the necessary infrastructure in place for them to operate efficiently and meet these requirements.

At a minimum, hospitals must have the following knowledge infrastructure:

- Single longitudinal record of the cost incurred for an episode
- Insights on PAC utilization trends and patterns, which includes the typical duration of treatment for specific episodes, costs, typical readmission rates, etc.

Information systems and efficient workflows would mean that clinical data **availability, access and authenticity** is assured. Transfer of care from Acute to PAC settings, continual of treatment and coordination of information with care managers are key elements that can go wrong and result in financial losses. To put this in perspective, one instance of readmission more than doubles the cost of a care episode. Further, effective October 2014, readmission penalties have increased by 50% to 3% for Medicare inpatient payments[1] for FY2015.

Clearly, PAC organizations signing up for BPCI model must focus on establishing an organized information collation to be successful. The more informed, the better the decision. Better decisions have better outcomes. Therefore, the coordination and communication of data should be an integral part of the overall BPCI strategy. Beyond gathering this information, is the requirement to make it readily available and as automated as possible. The following are essential components to consider when creating useful information tools for a BPCI initiative:

- Provider portals: should function as a central communication tool for BPCI
- Mobility: improves flexibility and usability
- Device Integration: allows for ease of use and scalability

We will explore each of these further in the following sections.

[1] - According to the Hospital Readmissions Reduction Program – Center for Medicare & Medicaid Services (CMS)

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Provider Portal – A Powerful Integration Tool

As a result of CMS's BPCI and other bundled care initiatives; provider portals have emerged as powerful tools that bring providers and PAC agencies together under the guidance of a care navigator. PAC agencies use portals to document and communicate PAC services delivered and as a consequence providers are able to receive crucial patient information.

With subscribers increasingly participating in BPCI initiatives, building exclusive portals for bundled care becomes complex and time consuming. Too often, providers are required to access different systems when planning both bundled and non-bundled care which can be cumbersome and time consuming. One solution is to extend the current provider portal to offer PAC preauthorization requests along with other PAC integration needs. This portal integration is an effective way of to empower providers to work with other PAC providers in the value chain.

The provider portal should provide a minimum set of features to include the following:

- Ability to evaluate and select PAC providers
- Sharing of clinical data and patient history with the post-acute caregivers
- Sharing of administrative services like authorization requests, billing and performance monitoring, reporting
- Communication and engagement with PAC providers in episodic care planning and monitoring
- Viewing and sharing bundling analytics to measure and monitor performance across PAC vendors for each patient setting category, track the effectiveness of patient settings for each bundle and review the performance of bundles across care plans

Building of such a portal or enhancing existing provider portals to act as a one stop place for providers to navigate, plan and manage episodic care, involves consideration of the following tasks:

- A complete assessment of the data being integrated from providers to be shared with the PAC agencies
- Building episode planning tools with intelligence from BPCI analytics driven by CMS data on these episodes
- Protecting access and PHI while sharing necessary patient data across care continuum
- Planning for the ability to manage care by communicating with PAC care navigators and care givers via the portal

As always, mobility will only further enhance the flexibility and efficiency of those that use it so that information can be provided at the actual point of care. Considerations for mobility of the BCPI Provider Portal will be discussed in the next section.

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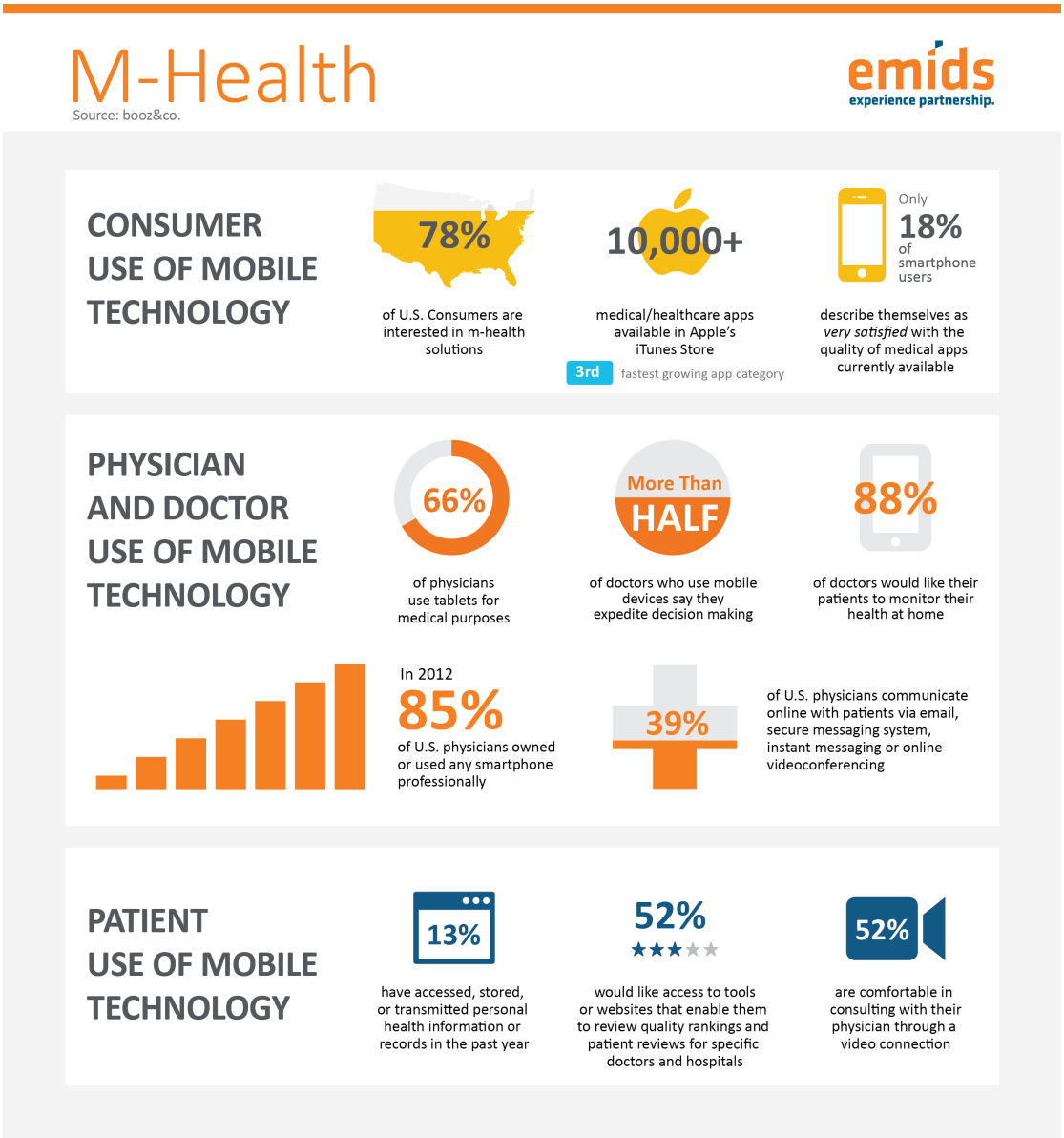
Mobility: Enabling the Achievement of BPCI

With increasing adoption of mobility by both physicians and patients, mobile technology is now a preferred medium not only to gather and share data but also to engage with patients. Industry trends and reports seem to suggest a growing wave of acceptance and adoption of digital technology in medical practices. Physicians, insurers, healthcare networks and other stakeholders are increasingly exploring means to leverage the mobile infrastructure and the growing number of smartphone users.

There are several industry reports that emphasize on how devices and mobility can enable care delivery. Below is a graphical view of industry adoption[2] of mobile technology in healthcare thus far.



[2] - Based on a report published by Booz & Co on M-Health adoption (http://www.strategy-business.com/blog/The-Advent-of-Digital-Health?rssid=healthcare&gko=f2f63)

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Clearly, mobility has a significant role in ensuring the patient-facing continuum of care in an Integrated Care Delivery scenario. Mobile apps offer a plethora of innovative options for care providers and patients to engage. Latest innovations in areas such as wearable technology narrowed the gap between care delivery and patient engagement. Mobile device integration, which involves the process of gathering patient and clinical data from mobile phones and wearable devices, has considerably enhanced the way treatment is delivered to patients.

A report, published by PricewaterhouseCoopers (PwC) titled *"Healthcare delivery of the future: How digital technology can bridge time and distance between clinicians and consumers"*[3], provides statistical insights on mobile device integration as a method adopted for care delivery. Key takeaways are:

- Close to 42% of the physicians are comfortable relying on at-home test results to prescribe medication.
- Nearly 50% of physicians believe that e-visits could replace more than 10% of in-office patient visits, and nearly as many consumers indicated their desire to engage with caregivers online.
- Health apps promote self-management of chronic disease, 28% of consumers said they have a healthcare, wellness, or medical app on their mobile device, up from 16% last year.
- Nearly 66% of physicians would prescribe an app to help patients manage chronic diseases such as diabetes.
- 79% of physicians and close to 50% of consumers believe using mobile devices can help physicians to better coordinate care as a team.

Building an Integrated Mobile Solution

With rise in the adoption of healthcare mobile apps and innovative, user-friendly personal health monitoring devices, there is a surge in real-time patient information generation and exchange between care providers via these devices as part of the care continuum. This information is critical for care management and advanced clinical interventions, while it also serves as a good basis for trend analysis.

There is a need to harness this data and securely integrate it with provider portals and back-end EHR systems via an integrated and secure mobile solution platform. For ease of use, access must be provided for patients to seamlessly upload their data from their personal health monitoring devices while ensuring system and patient safety is a primary component to any integrated mobile device solutions.

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The below table depicts the data-set exchanges that an integrated mobile solution platform can enable:

Provide to Patient	Patient to Provider
• Provider directories and directions to nearest provider • Benefit summaries and claims history • Drug adherence, prior authorization status, out of pocket costs • Self-diagnosis tools with symptom and disease lookup features • Daily wellness tracking tools for achieving health-related goals • Options for in-home monitoring and in-home care • Patient experience surveys	• Preference on care setting • Vitals from integrated devices and manual data inputs • Progress of care plan • Alerts on activities that are part of a care plan • Med-adherence alerts • Life style data

[3] - Article published by PricewaterhouseCoopers's Health Research Institute (HRI) – November 2014

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Device Integration

In an Integrated Care Delivery setup driven by the BPCI model, success for PAC provider organizations is determined by how you gather and leverage data and ultimately mitigate the risks associated with BPCI. Mobile Technology and patient health monitoring devices have proved to be an asset by enabling real-time care giver and patient communication, coordinating the capture of critical information and to a certain extent helping rationalize the need for on-site practitioners; all of which, do have an impact on cost.

The following table lists a few instances where device integration has successfully impacted care delivery.

Device Integration Success	Description
Generating actionable insights through analytics to yield better outcomes	Analytics allow healthcare providers to tailor unique care plans for patients and manage care plans to improve patient health. Additional goals of treatment are to identify high-risk populations for focused care.
Using increasing amounts of data to rethink the workforce and workflows	Using technology to adjust the workforce, can reduce costs and improve quality. Digital technology can be used to ensure physicians are practicing at the top of their licenses and leverage care extenders, such as nurse practitioners, when appropriate.
Targeted digital interventions	Health systems need to figure out how and where digital technology may replace or augment traditional office visits based on a patient's medical condition.

Sample Business Case

Let us look at specific use cases relevant to a PAC participating in BPCI where device integration can be harnessed to execute care delivery.

Patient recovering at home after a knee replacement surgery;

> *Patient has a mobile app for reporting experience and progress through a self-assessment, a wearable device to track patient's adherence to the exercise regimen designed as part of care plan to recover mobility; Both of these connect to a device integration hub/layer that in turn sends the data to BPCI Care management suite*.

Scenario 1: Identifying Early Intervention Opportunities In this scenario, the care coordinator intends to monitor the patient's adherence and progress, but no readings are available. The PAC home nurse is alerted and asked to intervene by talking to the patient about adherence, issues hindering adherence or changing the care plan if required. After the intervention, the patient receives their updated care plan on their mobile device and is provided alerts for each activity. The caregiver now has real-time updates and is able to monitor the care plan to ensure adherence and ensure the shortest path to wellness for the patient.

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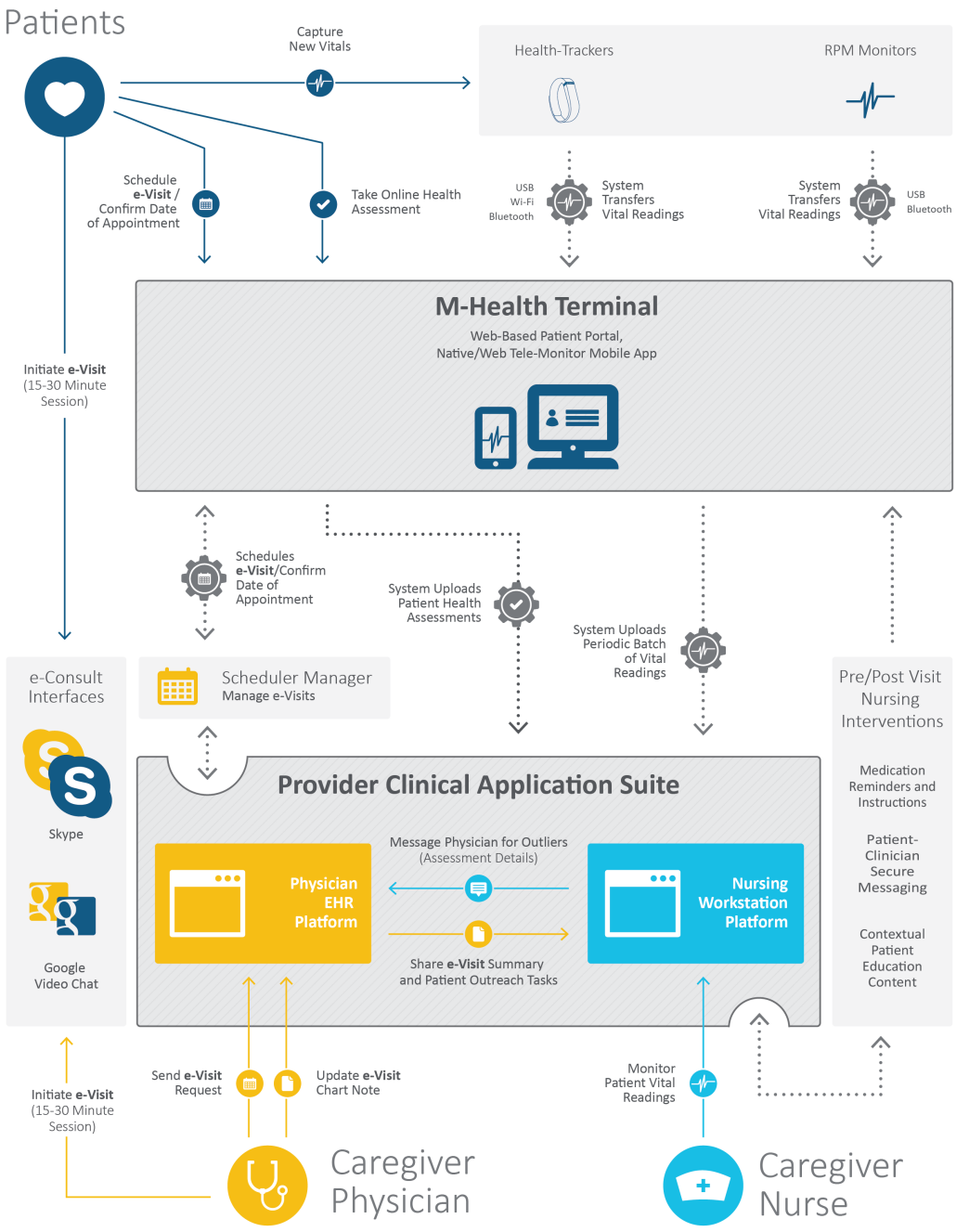
Scenario 2 : Automated Alerts In this scenario, the patient develops clinical issues on day 3 of first week. These issues result in the inability for the patient to complete their care plan which is reflected in the lack of activity registered on their wearable device. The care coordinator is informed through an automated alert and intervenes with a visit. After a quick analysis of the patient, the caregiver determines more patient support is required and brings patient back to the SNF, preventing a possible fall at home and readmission.

The flowchart below depicts how a mobile device could integrate into the clinical space and provide benefits to all stakeholders:



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Summary

Despite challenges, payer and providers have successfully operationalized bundled payments and are working towards influencing a permanent change in reimbursement. As per CMS's first year monitoring and evaluation report, BPCI appears to have positively affected provider performance. Most participants and episodes were under BPCI Model 2 during the first two quarters of the initiative. The participants have shown an increase in the transfer of patients to low cost PAC providers like home healthcare, a reduction in inpatient hospital Length of Stay (LOS) and the 30-day readmission rates have reduced by 2.5%. Although with increasing adoption, the profile of BPCI participants might change; BPCI is expected to grow significantly in the coming year. Even commercial health plans like BCBS North Carolina and Horizon Healthcare services have successfully trialed BCPIs and are expanding their programs.

Key factors for BPCI success are collaborative care design and communication. The consolidation of health and administrative data, its availability all through the entire care cycle and being able to make informed decisions from the data are key to eliminate the showstoppers for BPCI adoption, namely, financial risks and operational risks.

Hospitals and PAC providers must invest in and leverage Information systems to consolidate data sources. Available crucial health data should be made available not only to care-providers but also to stakeholders for better cost modeling of episodic care. They will need to move towards standardizing care processes, coordinating data collaboration across the chain of care, and most importantly considering patients as partners in care delivery.

Engaging with patients as a participating stakeholder is a game-changer. As more radical innovation comes forward, personal medical devices and wearable technology will be another core element in the lifestyle and expectations of patients.

This 'integrated' information systems cluster between post-acute providers, care management entities, physician groups and most importantly patients will lead to the foundation of realizing value in BPCI models.

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