

Our healthcare industry continues its movement into the accountable care era and communication is as important as ever. As the industry changes, it requires that we communicate actively and foster an unprecedented level of collaboration. All members of the care team must work together to improve quality, reduce medical errors, and care for patients in the most cost-effective manner.

We believe that **communication enables collaboration**. We designed our secure communication platform QUARC with clinicians, for clinicians, to foster collaboration, improve coordination of care, bolster information sharing and synthesis, and provide analytical insights into the communication health of organizations.

QUARC's functionality, usability, and big data analytics were created to prevent medical errors, improve organizational efficiency, and provide an unmatched level of security.

### Workflow One: Avoid Unnecessary Emergency Department Admissions



Mike is a 43 year old male who presents to the Emergency Department with a 3-hour history of sharp chest pain radiating to his shoulder. Initial EKG and enzymes are negative for acute myocardial infarction and the patient is awaiting disposition. Via the QUARC communication platform, the patient's registration in the EMR triggered an

FYI (for your information) event notification to the patient's PCP and an ASAP (as soon as possible) event notification to the Hospitalist. The Hospitalist visits the patient in the ER; he knows the patient needs more testing and follow-up but believes this can be safely done in the outpatient setting. The Hospitalist uses QUARC to send an ER referral message which automatically routes to the patient's PCP and the PCP's Practice

Scheduler. The PCP acknowledges the request and instructs the Hospitalist to have the patient present to the clinic when it opens tomorrow morning.

### Workflow Two: Prevent Complications with Lab Results Notifications



Janice is a 62 year old female who is on Warfarin for recurrent DVT. During her monthly outpatient clinic visit, a nurse draws Janice's blood and sends it to the central lab. At 6:30 pm, the lab finishes her bloodwork and finds her potassium to be 6.3 and INR 0.7. The entry of the values in the lab reporting system produces an HL7 message QUARC automatically picks up. QUARC recognizes the abnormal lab values and triggers a STAT message to both the ordering physician (Janice's PCP) and the Nurse Practitioner currently on call. A FYI message is also sent to Case Management. The Nurse Practitioner calls Janice to discuss her diet and makes a change to her Warfarin prescription. The NP then sends a direct message in QUARC to the Practice Scheduler to arrange for Janice to come back in three days to retest her bloodwork.

### Workflow Three: Proactively Identify Patient Complications with Analytics



Lenny is a 58 year old male who has been in the hospital for two days with complications related to his diabetes and heart failure. QUARC's patented analytics system identifies that Lenny's care team is not communicating in a pattern that is normal for a patient like him. Specifically, overall message volume and instances of keywords such as "discharge" are lower than benchmarks for similar patients. Lenny may be at risk for having increased length of stay and cost of care. The QUARC rules engine recognizes this and automatically launches an ASAP message to Case Management. The Case Manager looks at Lenny's QUARC Patient Digest and quickly

comes up to speed on what is happening with Lenny's care. He realizes that Lenny needs a consult and launches a follow-up endocrinology consult request. QUARC routes the message to the PA for the on-call Endocrinologist who comes to Lenny's room and gets his care back on course.

#### Workflow Four: Coordinate Post-Discharge Planning to Prevent Readmission



Anna is leaving the hospital today after being hospitalized for three days with pneumonia. The Hospitalist creates a discharge conversation in QUARC in which he thanks the PCP for the pleasure of caring for Anna and suggests that she follow-up with the PCP in a week. Using the secure attachment feature, the Hospitalist attaches the discharge summary and a copy of Anna's x-ray. The message routes automatically to Anna's PCP. A week later, the PCP uses the search function within QUARC to quickly find the discharge note and she reviews Anna's discharge summary and QUARC Patient Digest before going into Anna's room at the clinic. Using this information, the PCP creates a management plan to help prevent Anna from being readmitted and uses QUARC to communicate this plan to other members of Anna's outpatient care team.

#### QUARC

- FOSTERS COLLABORATION
- IMPROVES COORDINATION OF CARE
- BOLSTERS INFORMATION SHARING AND SYNTHESIS
- ENABLES SEAMLESS PATIENT HAND-OFF
- PROVIDES ANALYTICAL INSIGHTS INTO COMMUNICATION HEALTH

### About the Authors

**Baxter Webb, MBA, BSPH** is the Founder and Chief Executive Officer of MEDarchon. He has extensive first-hand experience in healthcare with over 15 years spent in the clinical setting. He is an honors graduate of the UNC School of Public Health and the Vanderbilt Owen Graduate School of Management. Prior to founding MEDarchon, Mr. Webb led research and development activities for two bioinformatics companies: CP Diagnostics and Proventys. In these roles, he managed the largest study funded by the NIH for pulmonary embolism, gained the first CPT code issued to a commercial entity by the American Medical Association, and led a computerized decision support product through the FDA's 510k de novo process. He holds several patents, has presented research at six different national medical conferences, and has published over a dozen peer reviewed research articles.

**Robert Shapiro, MD** is the MEDarchon Chief Medical Officer. Dr. Shapiro is a summa cum laude graduate of the University of North Carolina and the 2nd Honor Graduate from the Medical University of South Carolina. He completed his residency in internal medicine at the University of Virginia while concurrently completing a Masters of Science in Clinical Research. In addition to guiding the clinical usability and functionality of MEDarchon products, Dr. Shapiro is currently pursuing a fellowship in interventional cardiology from Washington University in St. Louis.



### About MEDarchon

When starting MEDarchon, we looked at the shortcomings of EMRs and engineered our development process in such a way as to avoid their mistakes: we worked with care teams to study clinician workflows and built a solution that fit those workflows while helping to remove inefficiency. We also did extensive research on patient safety to fully understand the role that communication failures play in causing medical errors. As a result, we layered in functionality, usability and analytics designed to prevent medical errors caused by communication breakdown. Lastly, we have priced our solution in an affordable, straightforward manner that makes sense and provides a high return on investment. Quarc is the solution that can help healthcare systems improve the outcomes that matter to the business, to the patients, and to the providers.

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