Laboratory Supply Shortages

Turning Crisis to Opportunity

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The COVID-19 pandemic has impacted every aspect of our personal and professional lives. In many places early in the pandemic, access to timely diagnosis was limited by the number of laboratories with the ability to perform COVID-19 testing, either because of staffing limitations or lack of reagent availability. These issues persist today, but as the pandemic continues to ravage the global medical community, supply chain issues have introduced new challenges that extend far beyond COVID-19 testing.[1] Shortages of specimen tubes, personal protective equipment, and other common laboratory consumables threaten access to all aspects of diagnostic testing.

Choosing Wisely and other laboratory medicine stewardship guidelines have been designed around the patient-centric and fiscally prudent principle of reducing testing that adds no value to patient care, and that even may be associated with increased risks.[2,3] An example of the latter is iatrogenic anemia due to excessive blood drawn for laboratory tests.[4] Conveniently, the same strategies that have been promulgated to improve care and reduce expenses related to laboratory testing may be deployed to help mitigate supply chain issues. These strategies include, to name a few:

1. Eliminating tests with little or no clinical utility
2. Curtailing the practice of standing orders that generate test requests and supply consumption frequently absent clinical need
3. Stopping the practice of "rainbow draws" in emergency departments
4. Evaluating computerized test panels for clinical usefulness
5. Implementing reflex testing and algorithms (ie, are second-tier level tests ordered before obtaining results of first-tier level tests)
6. Embedding of laboratory personnel (such as laboratory professionals with the new doctorate degree in clinical laboratory science [DCLS]) into multidisciplinary caregiving teams and clinical workflows, in order to provide just-in-time consultation and ensure that only tests that add maximum value to patient care are selected

COVID-19 supply chain issues have clearly created a health care crisis, including for the practice of laboratory medicine. But this crisis presents laboratorians with a golden window of opportunity to initiate or strengthen our effective test utilization and laboratory stewardship efforts, using Choosing Wisely and other guidelines as a foundation for engaging in interdisciplinary organizational discussions. Central to any stewardship program's success is engagement and partnership with clinical and administrative colleagues who support implementation of program initiatives.[5] Obstacles to such collaboration include conflicting

priorities, matrixed management structures without clear lines of authority or accountability, entrenched beliefs, and leaders unwilling to take on the heavy (and often unpleasant) lift of implementing significant culture change. However, necessity is the mother of invention, and crises spur innovation and collaboration; laboratorians who have previously had difficulty gaining traction for stewardship programs may suddenly find many eager partners where few existed previously. At least this has been the experience of the authors of this commentary.

Through such initiatives, laboratories can reduce unnecessary services, decrease the total cost of care and, most importantly, assure that resources are available to deliver the quality patient care that improves clinical outcomes and patient satisfaction. Critically, we must also ensure that the tactics, workflows, and stewardship infrastructure that have been catalyzed by COVID-19 are sustained beyond the duration of the crisis. For example, the evidence base derived from emergency interventions that would never have been implemented during normal times for fear of adverse outcomes (eg, significantly restricting the indications for coagulation testing due to an acute shortage of sodium citrate anticoagulant [blue top] tubes) may enable permanent changes in ordering culture. COVID-19 has undoubtedly been a horrific global catastrophe with an almost inconceivable human cost, but we would be irresponsible to not use the opportunities it has presented us to improve health care moving into the future.

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