Asymptomatic bacteriuria (ASB) is a common finding in many populations. More than 80% of ASBs are erroneously labeled as urinary tract infections (UTI) and treated with antibiotics, even though Infectious Diseases Society of America (IDSA) guidelines discourage ASB treatment in most populations.\textsuperscript{1, 2} Treatment of ASB contributes to inappropriate antimicrobial use, adverse outcomes related to antimicrobial use, emergence of antimicrobial resistance, and adversely impacts patient care.\textsuperscript{2} Addressing this issue through (1) decreasing unnecessary urine cultures and (2) reducing treatment of ASB involves targeting urine culture stewardship across several stages: urine test ordering (pre-analytic); optimizing urine collection (pre-analytic); tailored reporting of urine tests (post-analytic); and laboratory processing of urine tests (analytic/processing) (Figure 1).

One strategy targeting laboratory processing of urine tests is reflex urine cultures (RUC) or “urinalysis with reflex to culture”. A RUC protocol performs a urine culture only if specific urinalysis (UA) parameters are met, such as leukocyte esterase (LE), nitrite, white blood cells (WBCs), or bacteria. Studies implementing RUC in selected outpatient and inpatient settings have successfully reduced rates of urine cultures performed, incidence of bacteriuria, and antimicrobial use without patient harm.\textsuperscript{3-7} However, widespread implementation of RUC is controversial and challenging. One key challenge is that UA parameters that best predict true infection are unknown.

In light of these challenges, hospitals must individually determine if use of RUC is appropriate in their local setting. The objective of this toolkit is to provide hospitals with tools and analyses to make this determination. First, we discuss our survey of RUC protocols across 51 DICON hospitals. Second, we introduce a RUC criteria analysis tool and demonstrate the analysis process with local hospital data. Finally, we provide an overview of strategies for targeting other important aspects of urine culture diagnostic stewardship, namely pre-analytic (ordering and collection) and post-analytic stages (reporting).
Figure 1: Key stages of urine culture diagnostic stewardship interventions.\textsuperscript{8,9}