Automated real-time patient urine output monitoring system

Technology #cu16126

This technology is a device that is capable of measuring patient urine output in real-time. The device can also be used to monitor pericardial drain output and pleural drain output. The data can be used for monitoring response to diuresis in patients with congestive heart failure and for early detection of acute kidney injury, sepsis, and failing pericardial and pleural drains.

Unmet Need: Real-time monitoring of urine output in patients with heart failure

Patients with congestive heart failure require frequent assessment of their urine output to monitor diuresis. Currently, inpatient assessment relies on ancillary staff to manually record urine volumes, which tend to occur at irregular intervals and are prone to error. Methods for monitoring outpatient urine output are not readily available, making diuresis assessments for these patients exceedingly difficult. Therefore, a convenient and accurate method for monitoring urine output for both inpatients and outpatients could help to improve management of patients with cardiac failure.

The Technology: Simple, cost-effective device for assessing urine output in inpatient and outpatient settings

This device attaches to any commercially available fluid collection container and uses a sensor and algorithm to assess the volume of fluid within the container. This portable, yet versatile device can be used with Foley bags or handheld urinals for use in hospitals and patient homes. By providing automated, accurate urine output measurements in real-time, this technology can enable physicians to more quickly address and optimize patient treatment regimens.

Applications:

- Live monitoring of both inpatient and outpatient diuresis
- Live monitoring of diuresis in patients with cardiac failure
- Live monitoring for early diagnosis of acute kidney injury
- Live monitoring of urine output for patients with renal dysfunction
- Live monitoring of pericardial fluid drainage
• Live monitoring of pleural fluid drainage

**Advantages:**

• Real-time urine output measurements
• Applicable to both inpatient and outpatient urine output monitoring
• Real-time pericardial and pleural fluid output monitoring
• Simplified data interpretation; data can be accessed via a screen on the device, a secure web-browser, or direct integration with electronic medical record
• Automated and unbiased analysis algorithm
• Enables faster, more accurate patient management and physician decision-making
• Cost-effective, allows nurses to focus on higher value patient tasks
• Cost-effective, may reduce length of patient ICU or hospital stay

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**Patent Information:**

Patent Pending

**Related Publications:**

**Tech Ventures Reference:**

• IR CU16126
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