مـؤسسـة حمـد الطبية
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Role of "IT" in Patient Safety

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ROLE OF IT IN PATIENT SAFETY

Patient care technology has become increasingly complex, transforming the way nursing care is conceptualized and delivered. Before extensive application of technology, nurses relied heavily on their senses of sight, touch, smell, and hearing to monitor patient status and to detect changes.

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Over time, the nurses' unaided senses were replaced with technology designed to detect physical changes in patient conditions.

Consider the case of pulse oxymetry. Before its widespread use, nurses relied on subtle changes in mental status and skin color to detect early changes in oxygen saturation.

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Now pulse oxymetry allows nurses to identify decreased oxygenation before clinical symptoms appear, and thus more promptly diagnose and treat underlying causes.

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While technology has the potential to improve care, it is not without risks. Medical devices are used by millions of health care providers around the world, device-related problems are inevitable.

While technology holds much promise, the benefits of a specific technology may not be realized due to four common pitfalls.

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I. Poor technology design that does not adhere to human factors and ergonomic principles

II. Poor technology interface with the patient or environment

III. Inadequate plan for implementing a new technology into practice,

IV. Inadequate maintenance plan.

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The growing sophistication of computers and software should allow information technology to play a vital part in reducing that risk — by streamlining care, catching and correcting errors, assisting with decisions, and providing feedback on performance.

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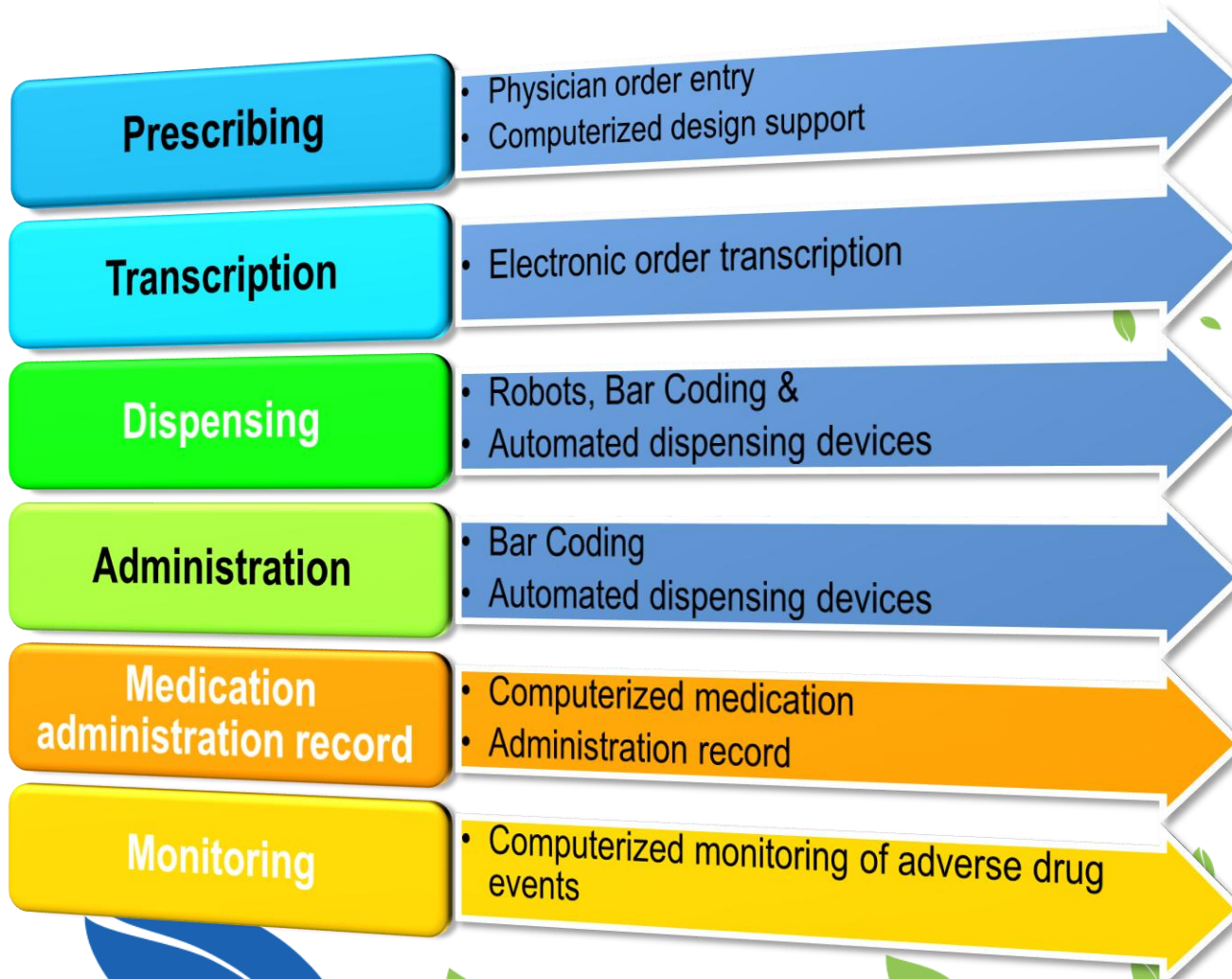Information technology can reduce the rate of errors in three ways:

a. Preventing errors and adverse events

b. Facilitating a more rapid response after an adverse event has occurred

c. Tracking and providing feedback about adverse events

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Several types of information technologies can be used to decrease rates of medication errors.
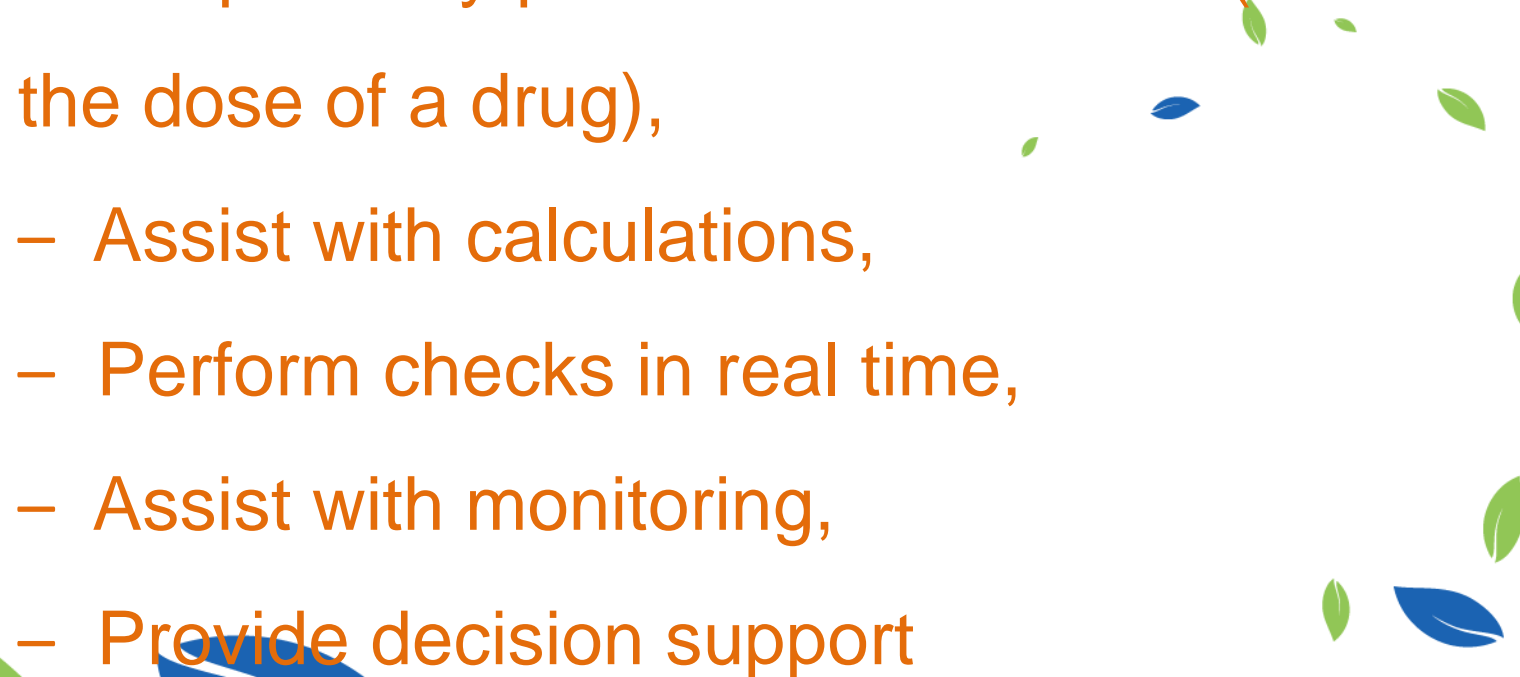
- Computerized physician order entry

- Robots for filling prescriptions

- Bar coding

- Automated dispensing devices

- Automated medication administration record

- Computerized adverse drug event detection

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Prescribing
- Physician order entry
- Computerized design support

Transcription
- Electronic order transcription

Dispensing
- Robots, Bar Coding &
- Automated dispensing devices

Administration
- Bar Coding
- Automated dispensing devices

Medication administration record
- Computerized medication
- Administration record

Monitoring
- Computerized monitoring of adverse drug events

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WAYS THAT INFORMATION TECHNOLOGY CAN REDUCE ERRORS

– Make knowledge more readily accessible,

– Require key pieces of information (such as the dose of a drug),

– Assist with calculations,

– Perform checks in real time,

– Assist with monitoring,

– Provide decision support

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BARRIERS AND DIRECTIONS FOR IMPROVEMENT:

Despite the substantial opportunities for improvement in patient safety, the development, testing, and adoption of information technology remain limited. Numerous barriers exist, although some approaches to overcoming them are at hand.

- Financial Barriers

- Lack of Standards

- Cultural Barriers

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CONCLUSIONS:

The fundamental difficulty in modern medical care is execution. Providing reliable, efficient, individualized care requires a degree of mastery of data and coordination that will be achievable only with the increased use of information technology. Information technology can substantially improve the safety of medical care by structuring actions, catching errors, and bringing evidence-based, patient-centered decision support to the point of care to allow necessary customization.

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Any questions?

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