

# UTILIZING TECHNOLOGY TO ENHANCE QUALITY IMPROVEMENT



LINDSEY EBERMAN PHD, LAT,ATC

ELIZABETH NEIL MS, LAT,ATC

Disclosure: Indiana State University Doctorate in  
Athletic Training Degree

The views expressed in these slides and today's  
discussion are ours

Our views may not be the same as the views of our  
colleagues or Indiana State University

Audience must use discretion when using the  
information contained in this presentation

[lindsey.eberman@indstate.edu](mailto:lindsey.eberman@indstate.edu)

[@isuathltraining](#)

[eneil@sycamores.indstate.edu](mailto:eneil@sycamores.indstate.edu)

[@bethneil13](#)

AS A RESULT OF THIS SESSION YOU WILL BE ABLE TO:



1. Discuss best practices for using health information technology (HIT) to change clinical practice.
2. Determine methods that will directly incorporate HIT and continuous quality improvement (CQI) into clinical practice.
3. Recognize ways to mentor use of HIT and CQI in clinical practice.

# UTILIZE HEALTHCARE INFORMATICS



Reduce errors by eliminating handwritten data, thus decreasing misreading or misinterpreting patient information



Pixabay (image free for commercial use without attribution)

Manage knowledge and information to guide evidence-based practice and identify areas for quality improvement

Communicate information with patients and other healthcare providers via electronic medical records or secured electronic mechanisms (e.g., telemedicine, encrypted e-mails, encrypted text messaging)

# APPLY QUALITY IMPROVEMENT



Measure quality of care in terms of structure, process, and outcomes

Assess current practices and compare to peers as a means of identifying opportunities for improvement

Identify errors and hazards in care

Improve the quality of one's own performance through self-assessment and personal change



Pixabay (image free for commercial use without attribution)

HELP YOU, HELP YOU



Photos by [Green Chameleon](#) on [Unsplash](#)

AUGUST 2017

STATE



## BEST PRACTICE GUIDELINES FOR ATHLETIC TRAINING DOCUMENTATION

---

<https://www.nata.org/sites/default/files/best-practice-guidelines-for-athletic-training-documentation.pdf>

# FOUNDATIONS OF MEDICAL DOCUMENTATION



Initial  
Evaluation

Daily  
Notes

Treatment  
Logs

Progress  
Notes

Discharge



# OUR MAIN GOAL



Communication

Monitor Patient Care

Legal Implications



# OUR MAIN GOAL



Monitor Patient Care



Nottingham, et. al. Athletic Trainers' Reasons for and Mechanics of Documenting Patient Care: A Report From the Athletic Training Practice-Based Research Network. Journal of Athletic Training. 2017;52(7):656-666.

Photo by [Owen Beard](#) on [Unsplash](#)

# IMPROVING PATIENT CARE THROUGH HIT



Facilitates Communication Between Clinicians

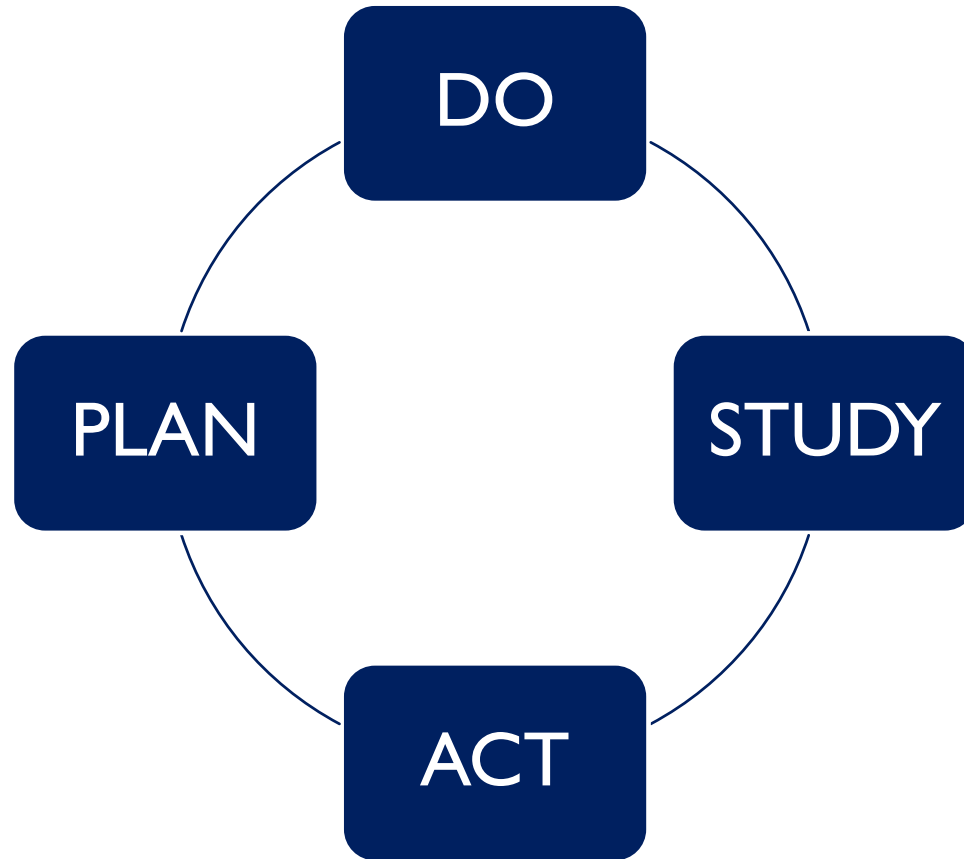
Reduces Medical Error

Improves Patient-Centered Care

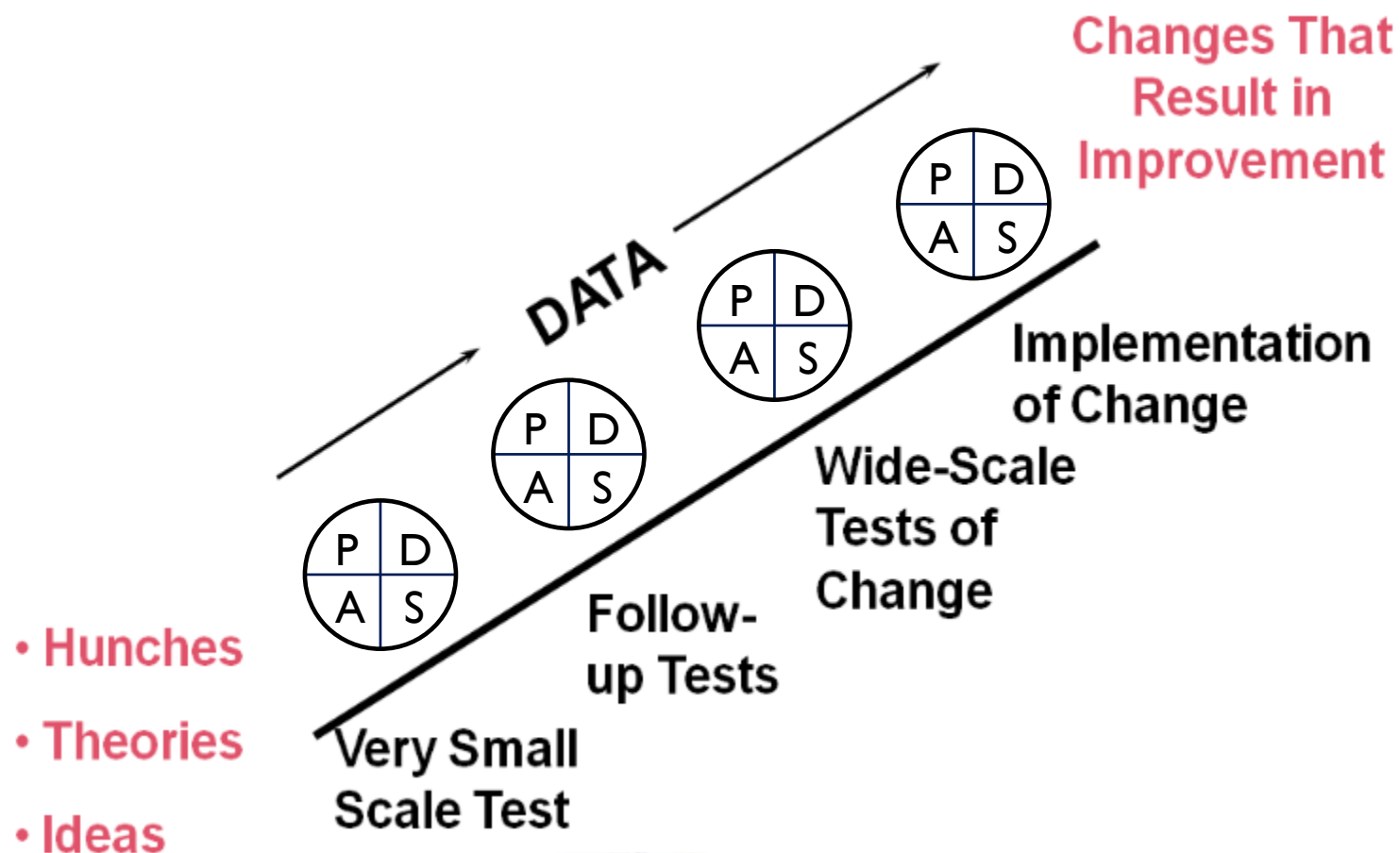
Provides Access to Information

Quality Improvement

PLAN – DO – STUDY – ACT



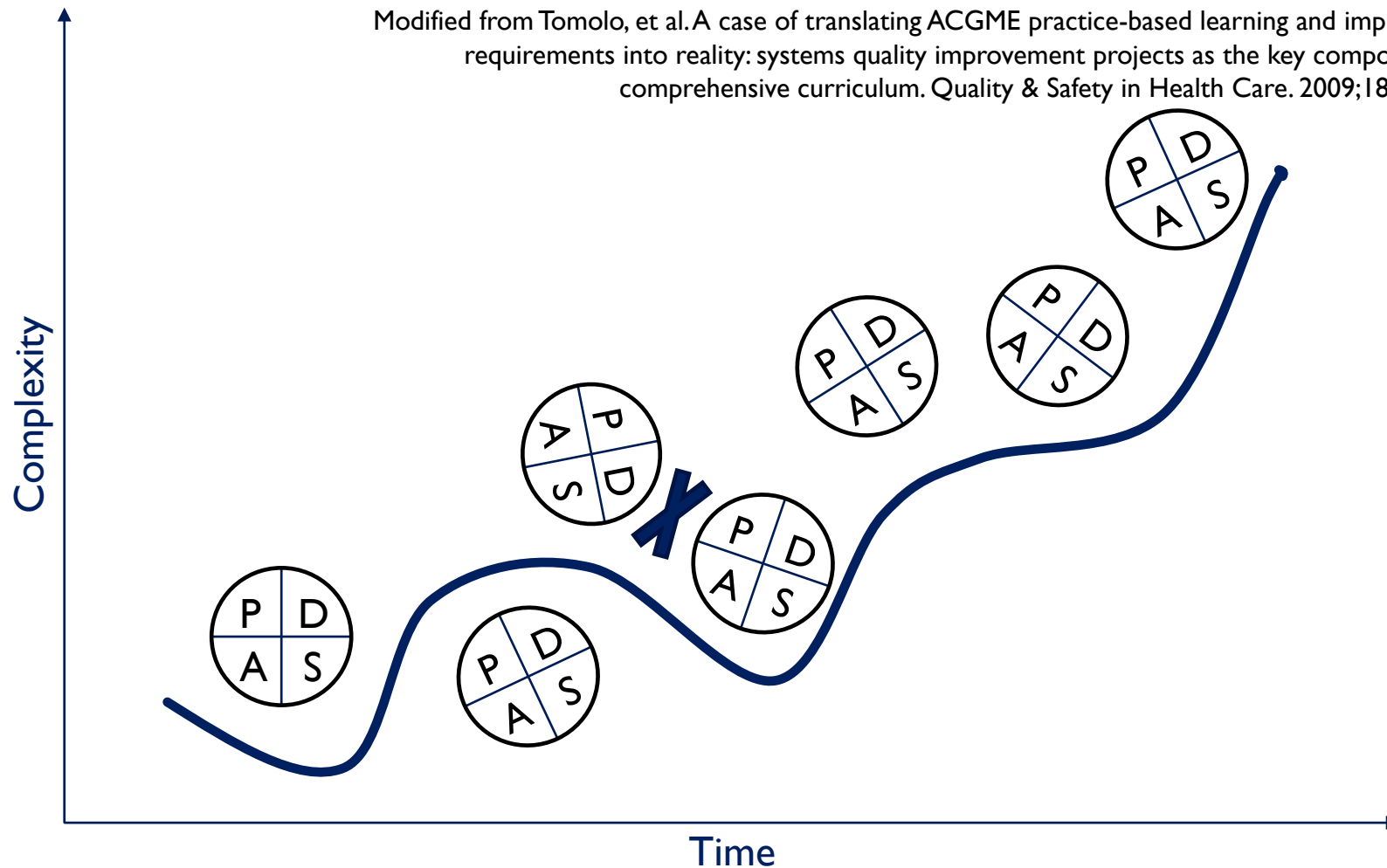
# PLAN – DO – STUDY – ACT



# PLAN – DO – STUDY – ACT



Modified from Tomolo, et al. A case of translating ACGME practice-based learning and improvement requirements into reality: systems quality improvement projects as the key component to a comprehensive curriculum. *Quality & Safety in Health Care*. 2009;18:217-224.



# BENEFITS FROM QI







Photo by [Stephen Mayes](#) on [Unsplash](#)

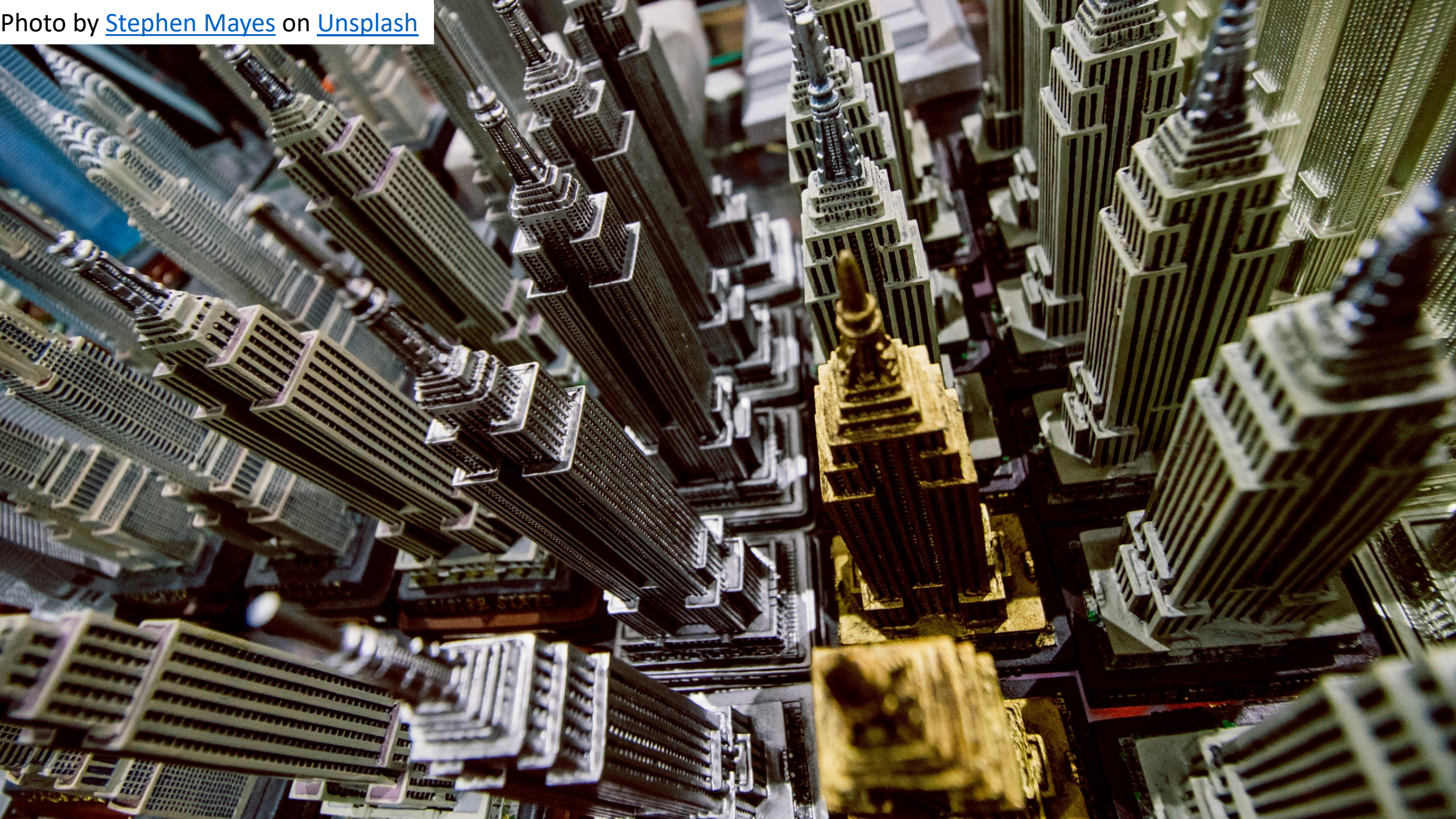
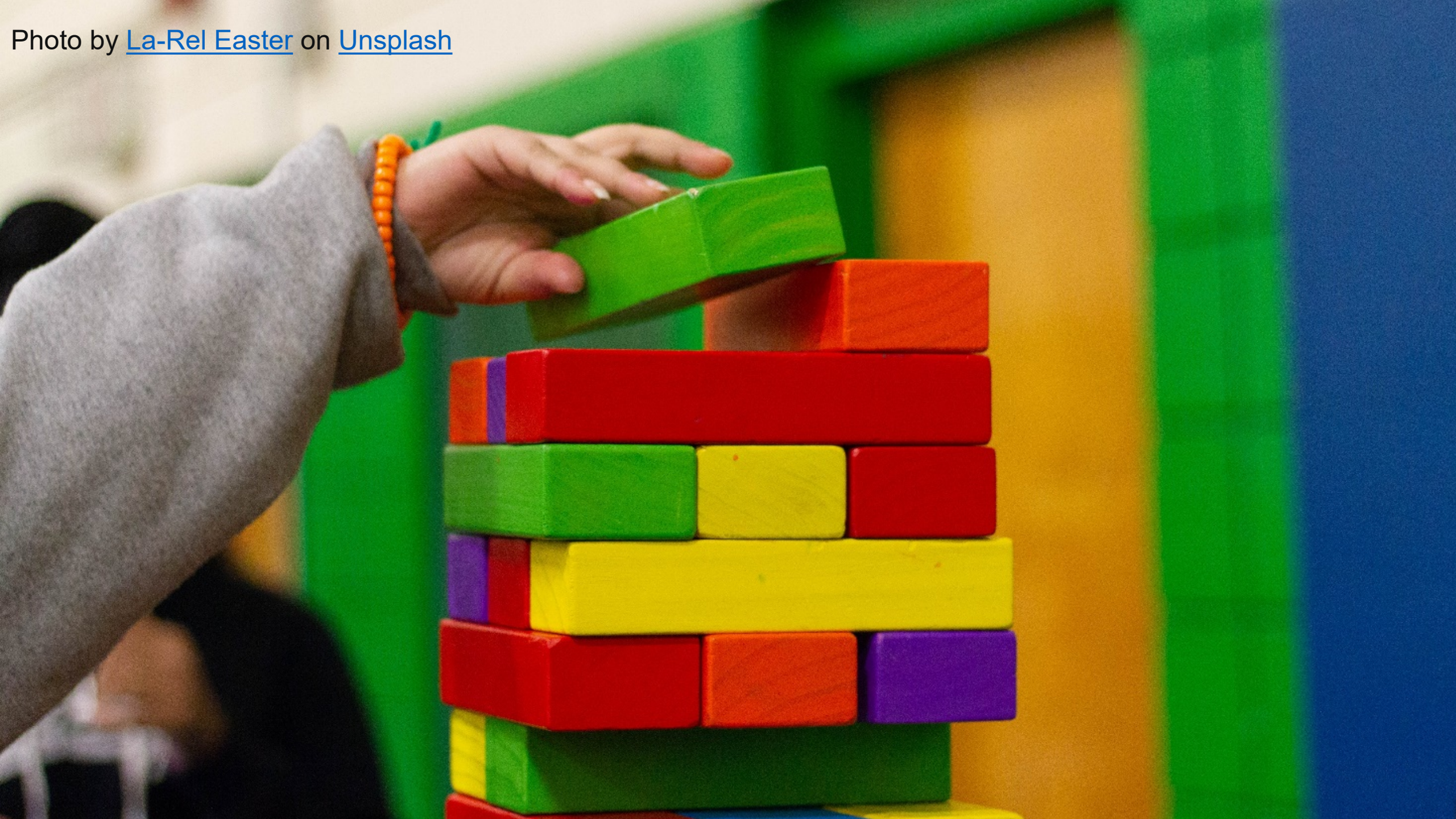
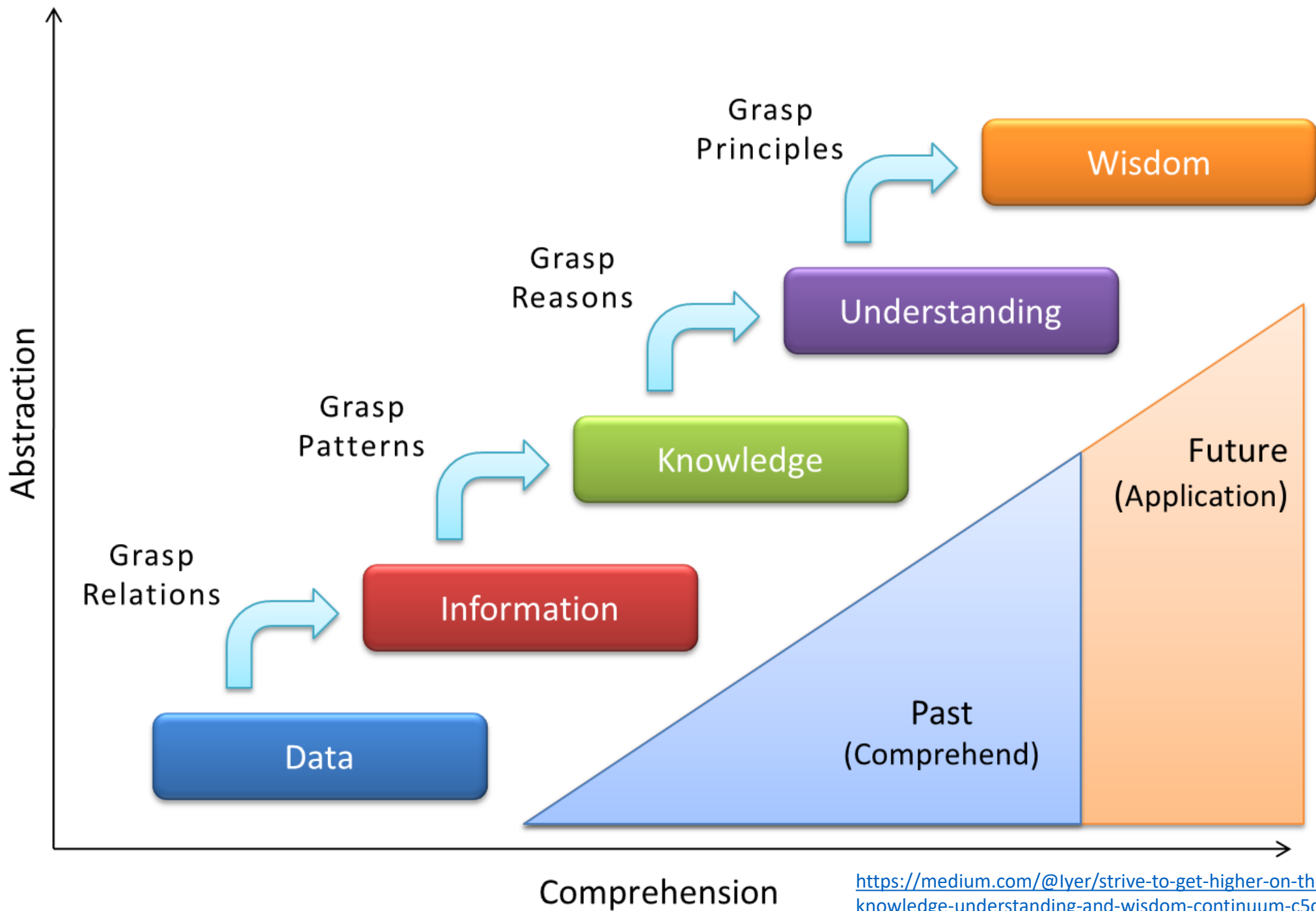




Photo by [La-Rel Easter](#) on [Unsplash](#)







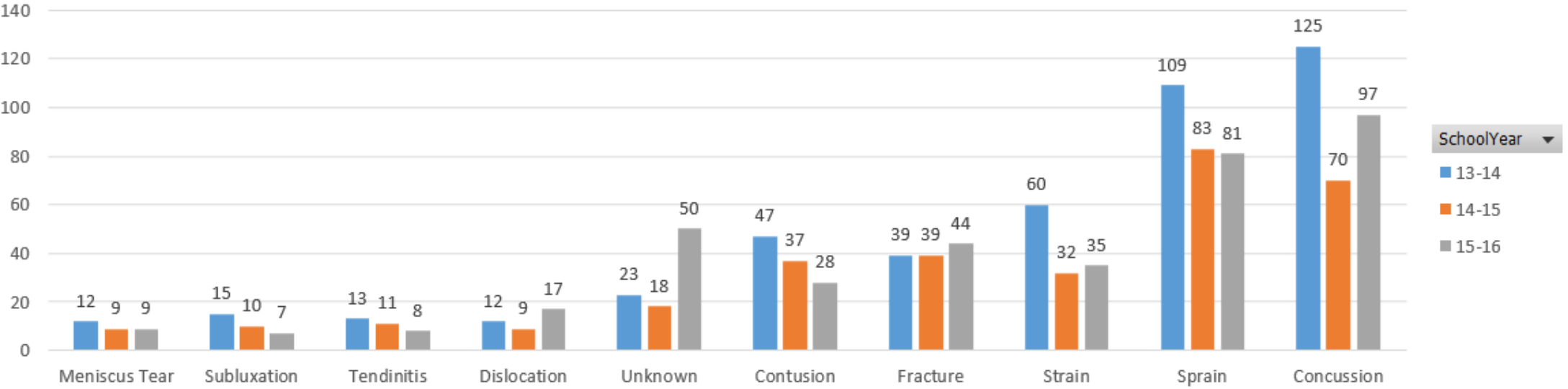
d	Group	Year	InjuryDate	h#	hName	InjuryDate	Year	BodyArea	BodyPart	Injury	Sport	Open	Mechanism	Level	Field	Season	Onset
HS 1	1	15-16	1/20/2016	1	Jan	20	2016	Pelvis	Pelvis	Unknown	track,f	Open	Unknown	Varsity	Season	Reinjury	
HS 1	1	15-16	1/19/2016	1	Jan	19	2016	extremity	Toes	Fracture	Football	Open	Blow	Unknown	Season	Acute	
HS 1	1	15-16	1/19/2016	1	Jan	19	2016	Head	Brain	on	l, f.	52	Whiplash	Varsity	Season	Acute	
HS 1	1	15-16	1/19/2016	1	Jan	19	2016	Head	Brain	on	Softball	Open	Blow	Varsity	Season	Acute	
HS 1	1	15-16	1/12/2016	1	Jan	12	2016	extremity	Ankle	Sprain	track,m	Open	Inversion	Varsity	Season	Acute	
HS 1	1	15-16	1/4/2016	1	Jan	4	2016	extremity	Hip	Strain	m.	Open	Kicking	Varsity	Season	Acute	
HS 1	1	14-15	1/8/2015	1	Jan	8	2015	Head	Brain	on	l, f.	205	Unknown	Unknown	Unknown	Unknown	
HS 1	1	14-15	1/2/2015	1	Jan	2	2015	extremity	Quad	Strain	Track, f.	211	Unknown	Unknown	Unknown	Unknown	
HS 1	1	15-16	2/9/2016	2	Feb	9	2016	Head	Brain	Injury to	l, f.	Open	Blow	Varsity	Season	Acute	
HS 1	1	15-16	2/6/2016	2	Feb	6	2016	extremity	Lower leg	No Injury	Football	Open	Unknown	Unknown	Unknown	Unknown	
HS 1	1	15-16	2/5/2016	2	Feb	5	2016	extremity	Knee	on	l, f.	35	Unknown	Varsity	Season	Acute	
HS 1	1	13-14	2/19/2014	2	Feb	19	2014	extremity	Knee	Strain	Soccer, f	528	Unknown	Unknown	Unknown	Unknown	
HS 1	1	13-14	2/19/2014	2	Feb	19	2014	extremity	Groin	Strain	track,m	528	Unknown	Unknown	Unknown	Unknown	
HS 1	1	13-14	2/4/2014	2	Feb	4	2014	Head	Brain	on	l, f.	543	Unknown	Unknown	Unknown	Unknown	

Data

Count of Injury	Column Labels			
Row Labels	13-14	14-15	15-16	Grand Total
Meniscus Tear	12	9	9	30
Subluxation	15	10	7	32
Tendinitis	13	11	8	32
Dislocation	12	9	17	38
Unknown	23	18	50	91
Contusion	47	37	28	112
Fracture	39	39	44	122
Strain	60	32	35	127
Sprain	109	83	81	273
Concussion	125	70	97	292
<b>Grand Total</b>	<b>455</b>	<b>318</b>	<b>376</b>	<b>1149</b>

Knowledge

Total Injuries By Injury Type Each School Year



Action Option 1: Dedicate professional development funding to enhance knowledge on recognition and management of concussions.

Wisdom

Action Option 2: Evaluate physical space and resources to meet management needs for sprains and strains

Action Option 3: Adjust workload responsibilities to ensure a provider is available for activities where concussions are most prevalent



# DIAGNOSTIC CRITERIA FOR STREP PHARYNGITIS

Are we using best practices (Centor Criteria) for diagnosing Strep Pharyngitis?



Photo by Wondview Strep A Test

Age 3-14 y/o

ICD-10 Code

Swelling/Exudate

Rapid Strep Test

Tender Lymph Nodes

Efficiency

Fever

Referrals

Cough (lack of)

Effective/Efficient Care





# CLINICAL PRESENTATION OF ELBOW INJURIES

Retrospective analysis of EMR (2009-2015)

32 AT facilities

67 patients diagnosed with an AC joint sprain (ICD-9 840 AC sprain)

Orthopedic Special Tests (3.2±2.0, range 1-10)

- AC Compression 35.8%
- Piano Key 26.9%
- Active Compression/O'Brien's 13.4%
- Cross-Body Adduction 11.9%
- Traction 11.9%
- Hawkin's Impingement 29.9%
- Apprehension 29.9%
- Sulcus Sign 25.4%
- Neer Impingement 22.4%
- Anterior glide 17.9%
- No Orthopedic Special Tests 17.9%

Best Practice Guidelines:

Active Compression/O'Brien's, Cross-Body Adduction, AC Resisted Extension



Photo by [Marc Manhart](#) on [Pixabay](#)

# TIBIAL STRESS FRACTURE MANAGEMENT PROTOCOL



Suspected Tibial Stress Fracture

N=4

FAB-Q

Amount of Time from Initial Report to Physician Consultations

14 days

TSK

Amount of Time to Initiating Return to Run Protocol

17.5 days

Amount of Time from Diagnosis to Return to Run

61.7 days

56-84 days

# CHANGE: PERSONS VERSUS SYSTEMS



Photo by [Piron Guillaume](#) on [Unsplash](#)



<https://goo.gl/images/L2yuEU>

# SUCCESSFUL IMPLEMENTATION OF HIT FOR QI



Vision and leadership

Clearly defined goals and planned strategies

Transformation to help patients

Teamwork and communication



Photo by [rawpixel](#) on [Pixabay](#)



---

# STATE

---

## Doctorate in Athletic Training *Class Offering*

### ATTR 871 – Health Information Technology



No Application  
Fee

Three Week  
Course July 2019

WWW.

Fully Online



\$450-\$518  
(Depending  
on Location)



10 EBP CEUs  
for Completion

---

Do you want to understand how to turn data into wisdom?

---

System-wide compliance for medical documentation

---

Quality and integrity of health care data

---

Data collection and analysis

---

## ADDITIONAL READINGS AND RESOURCES



[National Athletic Trainers' Association: Best Practice Guidelines for Athletic Training Documentation](#)

[National Athletic Trainers' Association: Secondary School Value Model](#)

[Using Health Information Technology to Support Quality Improvement in Primary Care](#)

[QI Indicator Worksheet](#)

[US Department of Health and Human Services Health Resources and Services Administration: Quality Improvement](#)